JPRS-EST-94-034
9 December 1994


# JPRS Report

# Science & Technology

## Europe/International Economic Competetitiveness

# Science & Technology

## Europe/International

## Economic Competitiveness

*JPRS-EST-94-034* *9 December 1994*

CONTENTS

NOTE TO READERS: After this issue, we will no longer publish a separate report titled Europe/International, Economic Competitiveness, but will incorporate the items normally published in that report into the Europe/International Report. We expect that readers will find that this streamlining will mean faster turnaround of the material we translate and publish.

### S&T POLICY



### CORPORATE ALLIANCES



### CORPORATE STRATEGIES

## EAST-WEST RELATIONS



## EUROPE-ASIA RELATIONS

## European Commission Pushes for More R&D Cooperation

*BR0712123394 Brussels EUROTECH FORUM JOURNAL in English Nov 94 pp 1-2*

[Unattributed article: "Coordination of Research"]

[FBIS Transcribed Text] The European Commission has decided to activate dormant treaty provisions for the coordination of research carried out by the different Member States.

Article 130H of the Maastricht Treaty and other articles deal with coordination. According to Research Commissioner, Mr. Antonio Ruberti, who revealed details of the Communication after it had been approved by the Commission following its meeting on 19 October, there has been a failure to put Art. 130H into practice by Member States, in regard to their national research programmes. Such is the extent of this natonal R&D, that the Framework programme (1994-1999) only represents 13 percent of public R&D expenditure in the EU, or just 4 percent of European GDP. The Italian Commissioner also referred to Articles 130K and 130L whch allows for research to be carried out by Member States and to be partly supported by the EU.

Details of this move were outlined in a Communication approved by the Commission at its meeting on 19 October. This set out "a strategy for a progressive intensification of cooperation and better coordination of European research policy." Coordination of research efforts carried out throughout Europe is being seen as complementary to the EU's own R&D efforts as represented by the Fourth Framework programme. Promoting cooperation within the community, it is hoped, will increase the competetive ability of European firms worldwide. Yet, it is readily admitted that this could blunt the competetive edge of many firms operating in the "domestic" European market.

The cause of coordination has most recently been championed by the White Paper on Competetiveness and Employment which identified the fragmentation of European R&D as a serious problem. As such, the Corfu Summit, at the end of the Greek Presidency of the European Union, defined coordination as one of six priority areas. It was also the subject of a resolution by the European Parliament last May. Therefore, pressure has mounted on the Member States to tackle the problem. The Communication has resulted form this process.

It calls for action on three levels: setting Research and Technology Development (RTD) policy, the operation of research programmes, and international cooperation.

The main thrust of this, as pointed out by Commissioner Ruberti, is to complement the Fourth Framework programme with a drive towards coordination whch aims to design an R&D policy emphasising cooperation. The tangible expression of this includes a database of information on national RTD policies, which is both relevant and comprable, as well as a common set of references concerning technological forecasting.

Moreover, ETAN (European Technology Assessment Network), which will go into operation as part of the socio-economic reesearch section of the Framework programme, will combine the analytical, observational, and forecasting abilities currently existing in individual Member States. The European Observatory of Science and Technology in Seville, Eurostat, and the relevant Commission services will also contribute via this part of the Framework Programme to the establishment of this common reference database. The U.S. Office of Technology Assessment is providing something of a model for all of this. Overall, the aim is to create a framework in which, technologically and financially, the right choices are made.

The exchange of information on Member States' research policies by means of more frequent ministerial meetings in the form of informal Councils and get-togethers by the Directors of Research from the different Member States is also envisaged.

"We want to use the resources of the Framework programme to help sectors that are strategic and important. Helping sectors that are cooperating." This gives an indication of the Commission's sudden drive towards coordinating research on the EU level.

The Commission recognises as a worthy objective, the topping up of funds for projects which interconnect research work carried out by individual Member States. It regrets the fact that, in the last ten years, there has been a dearth of such proposals. Developing such an approach is seen as vital to becoming more competetive with Japan and the United States. Developing interconnection between R&D of Member States was also described by Mr. Ruberti as a parallel and complementary measure to the Framework programme itself.

However, the Commission readily admits that it is not certain that companies and Member States have the will to accept the possible implications for a competetive ability. Striking the balance between losing a degree of competetiveness within Europe so as to be more competitive worldwide is how the Commission likes to describe the new emphasis on coordination.

Cooperation is regarded as being the natural precursor to coordination. The communication, according to the Commission, draws a number of historical lessons, the chief one being that proximity to the Market makes cooperation more difficult. The loss in recent years of competitive ability on the part of many European companies came as a shock. Therefore, highlighting coordination at this point of time is seen by the Commission as a way of instigating cooperation.

The aeronautics industry was lauded for being a pioneer in coordinating its research efforts on a European level.

In the words of Commissioner Ruberti, they "got their heqds together" and submitted a single programme to the Commission, linking up seven European research centres. The car industry, it was said, was following a similar approach. And other sectors, including space and biotechnology, were also said to be showing signs of doing likewise.

### European Fourth Framework Research Programs Outlined

*BR1811123694 Paris AIR & COSMOS/AVIATION INTERNATIONAL in French 14 Oct 94 p 20*

[Article by Framboisette Jassogne: "Community Research Takes Shape"]

[FBIS Translated Text] Specific programs in the Fourth Framework Program are gradually being defined and European manufacturers can expect subsidies worth 2 billion [French] francs [Fr].

At the end of September, ministers from the 12 European Union [EU] member states approved seven specific programs within the Fourth Framework Program for Community research. Six months after the adoption of the Framework Program, over half of the 20 specific programs have been given the go-ahead by research ministers. Among the latest seven programs, four concern the aeronautics industry: "standardization, measurement and testing" (ECU173 million/Fr1.2 billion), cooperation with third countries (ECU540 million/Fr3.7 billion), telematics (ECU843 million/Fr5.7 billion) and information technologies (ECU1.119 billion/Fr13 billion). Apart from the transport program, which has not yet been endorsed by the Twelve, European manufacturers are now aware of the full range of possibilities offered by Community research policy as well as the rules of the game.

Last June, the European Commission adopted the first specific program in this Fourth Framework Program devoted to "industrial and materials technologies." With a financial envelope worth ECU1,617 million, this program set aside about ECU230 million for aeronautics alone. Aeronautics manufacturers can now expect ECU300 to 400 million from the Community coffers for pre-competitive research. This sum is still a far cry from the ECU700 million promised by Martin Bangemann, European Commissioner in charge of the EU's industrial policy. However, on the whole, it is very satisfactory, even totally unexpected.

Furthermore, details of the work program on European research on "industrial and materials technologies" have just been revealed. Calls for tenders for this specific program will be published on 15 December next as announced in the "Official Journal." Three areas of research have been defined. For the first area, interested parties will be able to submit research projects on the integration of new technologies in production systems, the development of technologies for clean production, the rational management of raw materials, security and reliability of production systems, human and organizational factors in production systems. For the second area, the European Commission will select projects relating to materials engineering, new methods of product design and manufacturing, reliability and quality of materials and products, recuperation technologies for products at the end of their life cycle. In the third area, the Commission had already singled out aircraft and other forms of transport. For aeronautics, Brussels is prepared to fund projects linked to the design, production, security, and performance of aircraft as well as the integration of technology systems for the environment, etc.

For the specific programs adopted on 29 September last, national and Community experts will decide on a work plan similar to the one drawn up for the "industrial and materials technologies" specific program.

In the meantime, these experts have worked hard to ensure an improved and more comprehensible management of all these programs. Other than more flexible and simplified procedures, there is a question of introducing variable Community financing according to the nature of the programs and research projects. It is further planned to renew each term one third of the committee of experts responsible for the evaluation of projects, and also will each refused applicant be informed of the exact reasons for the rejection of the proposal.

### Fifth Framework Scientific Forum Established

*BR1711141494 Madrid EFE in Spanish 1416 GMT 16 Nov 94*

[Article signed "BF/RS": "New Body of More Than 500,000 European Scientists"]

[FBIS Translated Text] Madrid, 16 Nov (EFE)—Top officials from European research centers met in Madrid this week for the European Union of Research Organizations-Heads of Research Councils ["EURO-HORCS"] forum. They agreed that a new strategic body for scientific policy should be created, comprised of more than half a million researchers.

Jose Maria Mato, Higher Council for Scientific Research (CSIC) president will preside over EURO-HORCS for the next six months. At a news conference today he stressed that "the European scientific community has entrusted Spain with the presidency of this body which has the backing of 70 percent of basic scientific researchers in Europe."

The EURO-HORCS group was created two years ago as a forum where European Union [EU] research bodies could debate R&D-related issues "on an informal basis."

The group has met three times in two years. The fourth meeting, and the first in Spain, was held on 14 and 15 November in the Student Residence at the invitation of the CSIC.

Speaking at a news conference, the president of CSIC reiterated that "the new body will be allocated a budget eight times greater than that of the EU's Third Framework Program."

Mato said that plans for the future of EURO-HORCS were not aimed at giving fresh impetus to scientific projects, but instead were intended to lay down strategic guidelines for the EU's Fifth Framework Program to be unveiled in the Netherlands next April.

The Madrid meeting also agreed to strengthen relations between EURO-HORCS and the European Science and Technology Assembly [ESTA], a consultative body created recently by the European Commission. Additionally, it decided to establish contacts with the European Science Federation [ESF].

The CSIC president also pointed out that Spain's scientific production represents 2.1 percent of the world total and said that in 1995 the CSIC hoped to have a budget of around 55 million pesetas, equivalent to 1 percent of Spanish GDP.

## EU: Interregional European Research Association Created

*95WS0036B Paris AFP SCIENCES in French 20 Oct 94 pp 6-7*

[Article: "Creation of Interregional European Research Association"]

[FBIS Translated Text] Paris—Five regional councils in northern France have just created an Interregional European Research Association (AIRE) designed to facilitate optimal diffusion of the results of Community research.

AIRE's creation was formalized on 19 October at Chateau de Montvillargenne-Gouvieux near Chantilly. The site was chosen for its proximity to all parties to the accord: the regional councils of Champagne-Ardenne, Ile-de-France [i.e., the Paris region], Haute-Normandie, Nord-Pas-de-Calais, and Picardie.

AIRE is one of five planned French interregional centers whose mission will be to keep enterprises, laboratories, and other research centers better informed on Community research programs, help them participate more effectively in those programs, and allow enterprises to better exploit the results of European research.

Creation of AIRE should strengthen interregional cooperation in research, development, and technology transfer. It will also help each region draw more effectively on the skills of its four partners; the five regions together are home to 34 percent of France's population and 60 percent of its research infrastructure.

The operational work of AIRE, the first of the interregional VALUE centers, will be organized around a coordination structure located in Amiens (Picardie) and six technological facilitators attached to organisms specializing in technology transfer and other technical services to enterprises.

The partner organisms are the Materials CRITT [Center for Technical and Technological Research and Innovation] in Champagne-Ardenne, the Transfer Center of the University of Rouen in Haute-Normandie, the Bio CRITT and the Technological Partnership Sector of the French Foreign Trade Center in Ile-de-France, the Center for Research on Industrial Environment at Dunkerque (Nord-Pas-de-Calais), and the Center for Exploitation of Glucides in Picardie.

## Seven European Agencies Form Organization for Aerospace Research

### Swedish Report

*95WS0056A Stockholm NY TEKNIK in Swedish 20 Oct 94 p 24*

[Article by Sven-Olof Carlsson: "Europe Strengthens Aerospace Research"]

[FBIS Translated Text] The FFA [Aerospace Research Institute] in Bromma is going to cooperate with the British DRA [Defense Research Agency], French ONERA [National Office for Aerospace Studies and Research], Dutch NLR [National Aerospace Research Institute], Italian CIRA [Italian Aerospace Research Center], Spanish INTA [National Institute of Aerospace Technology] and German DLR [German Aerospace Research Institute].

"This is the first technology sector within the EU which has come this far in cooperation," said the deputy chairman of the EU Commission, Professor Antonio Ruberti, at the signing of the agreement last week.

The agreement is the fruit of ideas which have developed within the EU's directed project in the aircraft industry. The goal for the new research cooperation is to broaden and strengthen the entire technological base for the European aircraft industry.

#### Plan of Action

During the 18-month-long preparation for the agreement the institutes worked out a joint plan of action for the next few years. The first step is the signing of the association agreement.

In the continued work, working groups for joint research projects are to be formed, cooperation between the facilities of the institutes is to be developed and personnel exchanged.

The most important joint technical factor will be "modelling simulation;" new systems for simulation will be developed in order to prevent mistakes during construction.

**Special Fields**

But the action plan also involves the institutes strengthening their special fields.

"The joint part will be reinforced by the fact that the various institutes will concentrate especially on what they are already doing well. On the part of the FFA this is acoustics, system simulation and wind tunnel experiments, for example," says Lars B. Persson, general director of FFA.

The FFA will also pass on the recognized know-how of the Swedish industry in developing cheaper aircraft, both civilian and military. This is considered particularly valuable now that the key word, above all for military projects, is "affordability"—being able to afford them.

**Cooperate**

It will be some time before all the institutes will be working together.

"To start with, the intent is for us to begin cooperating in groups of two or perhaps three. With mutual exchanges of qualified personnel," says Lars B. Persson.

This means, for example, that a Swedish FFA technician could become the project leader for a research project at Onera in Toulouse. And that an Onera researcher could head projects at FFA in Stockholm-Ulvsunda.

This cooperation will then lead to broader cooperations. The objective for the development is ultimately to create a European network of institutes and researchers.

## French Report

*95WS0056B Paris LA LETTRE DU GIFAS in English 3 Nov 94 p 1*

[Unattributed article: "ONERA: Cooperation Scheme Unites Seven European Research Facilities"]

[FBIS Transcribed Text] Seven European aeroautical research organizations signed a joint cooperation agreement in Brussels on 11 October 1994. Proceedings were held in the presence of A. Ruberti, European Commissioner for Science, Research and Development. The agreement, signed by the chairman or directors of CIRA [Italian Aerospace Research Center] (Italy), DLR [German Aerospace Research Institute] (Germany), DRA [Defence Research Agency] (U.K.), FFA [Aerospace Research Institute of Sweden] (Sweden), INTA [National Institute of Aerospace Technology] (Spain), NLR [National Aerospace Research Institute] (Netherlands) and ONERA [National Office for Aerospace Studies and Research] (France), is the first phase in a joint project aimed at enhancing European aeronautical technology research. The agreement represents an important step towards the creation of a joint European aeronautical research body. It also reflects the trends established on the pan-European aeronautical level in both the civil and military spheres. It is expected that a gradual expansion of cooperation, including the creation of technical centers, work sharing and the negotiation of joint relations, will enhance individal expertise and resources while favoring a more efficient basis of operation for the industry, airlines, governments and all parties that stand to benefit by European research. Cooperation ways and means will be formed gradually. The signing of the joint agreement concerns the first stages in this project and sets out a plan of action for civil aeronautics and for the civil-military branch. Aims are:

—to expand the field of application and volume of reseach pursued on a cooperation basis by jointly creating and executing new research programs and projects for mastering new technologies;

—to adopt concrete measures for the rational employment of resources by setting up a coordination policy for rational application of heavy facilities and other experimental tools and for an optimum investment structure for the purpose of coping with joint needs on the European level;

—to encourage an exchange of personnel among establishments.

## Status of European JESSI Program Outlined

*BR0612124494 Amsterdam COMPUTABLE in Dutch 18 Nov 94 p 2*

[Unattributed report: "Europe Sets Aside One Billion For Chips Research"]

[FBIS Translated Text] Munich—The JESSI [Joint European Submicron Silicon Initiative] program for the stimulation of advanced chip technology in Europe is proceeding satisfactorily. The JESSI board has reported steady progress on all sides. This European research program has already produced impressive results, which means that Europe's microelectronics industry is once again out in front.

This was highlighted during the biannual meeting held recently in Rome with the supporting government authorities. About 3,100 scientists and engineers from 180 industrial companies and research institutes throughout 16 European countries have been working on 73 JESSI projects.

It was further agreed to set the 1995 budget at about one billion guilders, which is in line with the 1994 budget. Account was taken of the conclusion of several individual projects. From the total budget, 49 percent will go toward the Technology subprogram, while the Applications, the Equipment and Materials, and the Basic and Long-Term Research subprograms will each receive 27, 14, and 10 percent respectively.

The aim of the Applications subprogram is to stimulate the development of chip sets and design tools for major new applications, such as high-definition television and

DAB (Digital Audio Broadcasting). Commercial success here strongly depends on the prompt availability of advanced chips. Thanks to JESSI, Europe is now in a leading position in the field of DAB. Its position in telecommunications has also been strengthened by the development of advanced chip sets within the JESSI program. Above all, numerous CAD [Computer-Aided Design] tools have been developed within JESSI, resulting in an increase in design productivity.

**Major Results**

The Technology subprogram has shown results which are of vital importance for the electronics industry throughout the whole of Europe. Europe is doing well in the technology race for memory chips.

The Equipment and Materials subprogram has ensured that Europe has become less dependent on imported semiconductor manufacturing equipment. Similarly satisfactory results have been reported from the Basic and Long-Term Research subprogram.

Most JESSI projects are going well according to plan. According to the most recent expectations, 90 percent of the projects will be completed on time, while the remaining 10 percent will be concluded at the most only three months later than planned.

## France: Minister of Research on CNRS' Budget, Restructuring

*95WS0020A Paris LE MONDE in French 22 Oct 94 p 15*

[Interview with Francois Fillon, minister for higher education and research, by Jean-Francois Augereau and Herve Morin; place and date not given: "Fillon Says: 'CNRS Is Not To Be Dismantled'"—first paragraph is LE MONDE introduction]

[FBIS Translated Text] The anxiety felt by the personnel of CNRS [National Center for Scientific Research] is "premature," opines Francois Fillon. The minister for higher education and research announces several budgetary measures which he says will allow the laboratories to continue functioning through the end of the year. He also reiterates his determination to "preserve (the CNRS) in its current structures," though the institution may undergo some "changes."

[Augereau/Morin] In late 1993 you launched a broad national consultation on the future of research. Today, the winds of change are blowing over the CNRS. How did this come to pass?

[Fillon] The wind of revolt is a bit premature. The personnel who have chosen to protest have done so in large part to object to a reform that is not even under consideration. With my approval, the director general of CNRS has launched a study of the future internal evolution of this institution and the evolution of its relations with the universities. He in turn has entrusted such a study to Jean Charvolin, director of the Laue-Langevin Institute.

As was underscored by the national consultation on research, there is no question of dismantling CNRS entities. CNRS is one of the driving forces of French research, and I certainly mean to preserve its current structures. But preserving it does not necessarily mean freezing its structures and rejecting any change.

[Augereau/Morin] What do you plan to do?

[Fillon] We plan to take action on three fronts: reinforce the multidisciplinary character of the CNRS; elaborate a clear strategy, consistent with the strategy of the state, and implement it within the framework of contractualizing the CNRS; and further strengthen close cooperation with the universities.

[Augereau/Morin] By some accounts, this will be done by reducing the number of major directorates of CNRS and significantly reducing the number of research units run by CNRS.

[Fillon] One of the problems is reinforcing the multidisciplinary character of the CNRS. Will it be strengthened by merging some of the major directorates? The question is on the table. For myself, I am awaiting the results of discussions to be held on this subject. As for the laboratories associated with CNRS, we are considering an administrative approach based at least in part on management by program. But whatever decisions are made, nothing will be done that could destabilize existing teams and laboratories.

Relations between CNRS and the universities are going to be straightened out on the occasion of the signing of the 4-year contracts which the state is negotiating with the universities. In the framework of those discussions, CNRS laboratories can choose either to adopt the new system pointing toward programmatic management or to continue on the current system. A special effort will be made to maintain and strengthen units for the newer universities whose research activities are beginning to grow stronger.

Up to a certain point, the two systems will coexist, so you can't say that a restructuring of the CNRS has caused the disappearance of such-and-such a unit. But before that, we must improve the administration of CNRS. The kindest word one can use to describe its management in recent years is "calamitous."

[Augereau/Morin] On this last point, how do you analyze the situation?

[Fillon] The misleading and inaccurate CNRS budgets submitted by the previous directorate have led us into crisis. Program authorizations have run far ahead of payment credits. The gap was 31 million [French] francs [Fr] in 1990; Fr80 million in 1991; Fr222 million in 1992; and the Fr224 million for 1993 grew to Fr352 million as a result of reckless promises to relocate certain activities. In 1994, the gap has been reduced to Fr53 million, and in 1995 payment credits will exceed program authorizations.

In the summer of 1993, I warned the former director of CNRS, but nothing was done. Today I estimate the extent of the damage to be some Fr500 million, and we may have equally difficult problems with the Title III portion of the budget dealing with the personnel of the establishment. This is why I have decided to request the general inspectorate of finance to conduct an audit of CNRS. Once it is concluded, I will propose a number of reform measures to the prime minister.

[Augereau/Morin] Despite all these problems, do you plan to help out the CNRS laboratories, which will have a very hard time finishing the year with some of their funds being frozen at the 40-percent level?

[Fillon] A number of steps have been taken to enable laboratories to operate through the end of the year. Among other things, I have managed to unfreeze and secure the disbursement of Fr147 million in past-year budgetary credits. I have also managed to get CNRS exempted from the freeze decided last May by the government that affected a portion of already-budgeted public expenditures. For research as a whole, the de-authorizations proposed by the Budget Ministry amounted to Fr440 million, or 8 percent of total credits. After negotiation, this figure was reduced to Fr195 million: Fr61 million for scientific programs of organizations other than CNRS, or 1.9 percent; the rest being taken out of ministry funds proper.

Finally, I have asked CNRS to put on the agenda of its 27 October board meeting a budgetary amendment authorizing supplemental payment credits. The sum of Fr200 million will be taken from the institution's Fr650 million in working capital, which is in excess of Fr500 million. All these steps together should enable CNRS to cover all 1994 funding gaps and function normally to the end of the year.

[Augereau/Morin] How long do you think it will actually take to put the CNRS back on a sound financial footing?

[Fillon] The time it takes before there is an increase in program authorizations will depend on the actual extent of the damage. But if the situation is as it has been described to me, new growth may be possible in 1996, which will not be the case for another sector, the Research and Technology Fund, whose budgetary predicament is such that one cannot hope for return to normalcy before 1997-1998.

## Germany's Fraunhofer Society to Expand to U.S.

*95WS0027A Duesseldorf VDI-Z in German Oct 94 p 10*

[Unattributed article: "Fraunhofer Society Expands to U.S.]

[FBIS Translated Text] Following the international integration of the markets of its industrial customers, the Fraunhofer Society (FhG) will soon be conducting research and development according to its proven German principle in the United States as well. The first step is the establishment by the FhG of Fraunhofer Resource Centers (FRC), at which German and U.S. partners will cooperate on the solution of problems in production technology and in the training of specialists. As reported in Volume 2, 1994, of TOOLS, the new information magazine by the Aachen production technicians from the machine tool laboratory (WZL) and the Fraunhofer Institute for Production Technology (IPT), the preparations for expansion of the research facilities is in full swing. Employees of the IPT are already informing themselves on location about the conditions of the U.S. market and are holding talks with representatives from research and industry. They are preparing for the founding of the first centers. Under their leadership the Fraunhofer Precision Manufacturing Resource Center is being established in Hartford, Connecticut; they are assisted in this by other Fraunhofer production technology institutes. The Aachen scientists are also involved in the FRC Center for Laser Technology in Ann Arbor, Michigan. There, the Aachen Institute for Laser Technology, together with the Dresden Institute for Materials Physics, will present developments for automobile construction in the vicinity of the Detroit auto industry.

These and other FRCs are the first steps in the comprehensive program for an international expansion of the Fraunhofer Society. Each of the FRCs will be supported by several German FhG institutes and offer their respective expertise in a bundled fashion. They are financed by government support from the United States and U.S. customers. The U.S. market can thus be analyzed and developed on location. In the process, contact is being sought with U.S. academic institutions and industrial enterprises. Throughout an establishment phase the resource centers show that they can prove themselves in the U.S. market, and afterwards each individual case will be studied as to whether an expansion into a research institute makes sense.

## Germany: BMFT Funds Joint R&D at Medium-Sized Companies

*MI1611152694 Berlin ETZ in German No 19, Oct 94 p 133*

[FBIS Translated Text] The "Joint Research Funding for Medium-Sized Business" programs provides support for research and development in small and medium-sized enterprises (SME's). It encourages these businesses to work more closely both with scientific facilities and with

one another. The Federal Ministry for Research and Technology (BMFT) measures fall into the following three sections:

—Funding for research projects undertaken by two or more SME's with research institute involvement;

—Funding for contract research with scientific facilities;

—Funding for personnel transfers between SME's and research facilities.

It is precisely by seconding scientists from research institutes to businesses that they are given an opportunity to apply their knowledge in actual practice. The program, which was launched on 1 September 1993, has proved extremely popular. 1,212 applications having been received up to the end of August 1994. To date, 444 projects worth a total of 52.5 million German marks [DM] have been approved. The businesses receiving funding are mainly in the electrical engineering (32.5 percent) and mechanical engineering (25 percent) sectors. It emerges from the applications filed that it is primarily firms with less than 50 employees and revenue below DM5 million that are seeking access to joint research and development projects. SME's can apply for funding under this program until the middle of 1998.

### Germany: Civil Aviation R&D Program Approved

*MI2811134394 Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German 20 Oct 94 pp 2-3*

[FBIS Translated Text] The cabinet adopted a new civil aviation research program with a proposed budget of 600 million German marks [DM] to cover the period from 1995 through 1998 on 6 October. The BMFT [Federal Ministry for Research and Technology] will bear 80 percent of the cost of financing the program and the BMWi [Federal Ministry for Economics] the remaining 20 percent. Industry will have to put up at least 50 percent of the costs incurred. The funding program will be implemented jointly under BMFT leadership.

Funding under this program will focus on precompetitive technology projects with a view to strategic product developments (known as key concepts) with a planning horizon of 2010, including technology projects directed toward:

—a future consumption-optimized, low-pollution jumbo (600- to 800-seater) aircraft employing new materials and structural techniques, having improved aerodynamics, and involving particularly cost-efficient manufacturing methods (the "eco-jumbo");

—improved-technology regional jet aircraft;

—a new generation of all-weather capability helicopters with substantially reduced noise emission levels, higher performance, and low operating costs;

—innovative engines making for up to 25-percent fuel savings and up to 15-percent nitrogen oxide reductions compared with the engines currently available; a considerable reduction in flight noise will be another target.

The purpose behind the funding is, firstly, to maintain the German aviation industry's competitiveness within a context of joint European work-sharing development processes and, secondly, to open up new areas of competence as a means of enhancing the industry's competitivity, stresses Federal Research Minister Dr. Krueger. The rising technological requirements prevalent in the aviation industry will also be borne in mind, he says.

The key concepts and focal points of the new aviation research program have been drawn up and coordinated in a process of intensive talks between industry, higher education, the German Aerospace Research Institute (DLR), and the ministries.

A particular concern is to orient the DLR's work toward the content of the program, the purpose being to gear the activities of the national research facility and industry more closely together so as to enhance their ability and will to work together and to speed up technology transfer.

The program will thus primarily provide funding for project consortia in which the achievements of all the participants are directed toward a single research goal, and which involve universities as well as small and medium-sized enterprises, particularly from the outfitting industry, which is largely made up of this type of business, explains Dr. Krueger.

In the program framework adopted by the cabinet, the new, civil funding program joins the aviation research work already launched by the Federal Government to form an integrated and coordinated overall strategy embracing:

—the BMVg [Federal Ministry of Defense] engineering program (DM230 million over the period from 1995 through 1998);

—the BMV [Federal Ministry for Transport] engineering program (DM4 million over the period from 1995 through 1998);

—the joint institutional funding of the DLR by the BMFT and BMVg (approximately DM600 million over the period from 1995 through 1998).

Overall federal aviation research funding over the 1995-1998 period thus amounts to about DM1.45 billion. Taking the DM600-million contribution to be put up by industry into account, research projects worth over DM2 billion will thus be set in motion.

The German aviation industry faces operating conditions that weigh particularly heavily on it in terms of international competitiveness (e.g., distorting funding

procedures in the civil and military spheres, and different export regulations depending on whether goods are for defense purposes or dual-use). In addition to funding research and technology, therefore, the Federal Government is calling for:

—a harmonization of international operating conditions under GATT [General Agreement on Tariffs and Trade], EU subsidy law, and export controls;

—the coordination of funding for bilateral or European projects with the partner countries and a stepping up of worldwide cooperation;

—a coordinated deployment of funds for aviation research under the 4th EU Framework Program (about ECU230 million) with a view to achieving efficient support for the national program.

The German aerospace coordinator, Dr. Goehner, emphasizes that the cornerstones of the civil program have been drawn up in a short time and with specific targets by industry, research facilities, and the ministries, with research, safety, transport, and, not least, environmental targets all playing a role. Dr. Goehner stresses that great value is being placed on small and medium-sized enterprises playing an appropriate part in the new funding program. However, the Federal Government is also expecting the laender to contribute with their own resources to enhancing the positive impact on Germany's competitiveness in aviation produced by the measures taken at federal level.

## Italy: Advanced Materials R&D Program Outlined

*MI0512102994 Turin RICERCA E INNOVAZIONE in Italian No 38, 1994 pp 20-21*

[Unattributed interview with Professor Carlo Rizzuto; date and place not specified; first paragraph is RICERCA E INNOVAZIONE introduction]

[FBIS Translated Text] Prof. Carlo Rizzuto is a lecturer in solid state physics at the Faculty of Engineering in Genoa, and is an expert in metallic and superconducting materials and superconductor applications. He is a member of the European science and technology assembly, and is vice president of the scientific committee of the National Institute of the Physics of the Matter.

[RICERCA E INNOVAZIONE] Professor Rizzuto, the national research plan for advanced innovative materials, that was launched by the Ministry for University, Scientific Research and Technology in 1988, is the first organizational base that this research sector has had in Italy. This sector is characterized by a small force of well-qualified researchers and a shortage of funds. When the plan, that sketched out an accurate "map" of the strength in the field, was launched, the absolute absence of coordination between the various research activities in the new materials sector, apart from a few interventions planned as part of the CNR's [National Research Council] finalized projects, was stressed.

There was the same situation of disjointed effort on the university front, where the same research was being carried out by various faculties, institutes, and departments, that often belonged to the same university; and perhaps this is still the case.

We are on the eve of the launching of the new research plan, of which you are the president and coordinator. What changes have there been in the organization and coordination of this research sector in the last six years?

[Rizzuto] I was able to participate in the drafting of the first national plan for innovative materials in 1987-88, and to start the preparation for a second study of the same type. I can say that many things have changed since then, some for the better, and some, unfortunately, for the worse.

There has been an improvement in the coordination of the existing effort, particularly regarding basic research, within both the universities and the CNR, and within other organizations. The National Institute of the Physics of the Matter (INFM) has been set up, and an interuniversity consortium has also been formed for materials chemistry. There is better coordination between the CNR's institutes and centers that are conducting research in these areas. There is also better coordination between these three organizations and the industrial laboratories.

There has been an appreciable growth in exchanges, collaboration and joint projects, and this has led to a rapid growth in positive participation in European Community projects, and in particular Brite II [Basic Research in Industrial Technologies for Europe].

On the positive side the successful start of large structural initiatives is also to be reported; the CNRSM [National Research Council for Materials Science] laboratory in Mesagne, the Elettra synchrotron light laboratory of Trieste, and the ESRF [European Synchrotron] laboratory of Grenoble (in which Italy has a large share), and the coordination of courses, both at diploma and degree level, and of materials research laboratories within various universities, as well as at the INFM (for example the TASC laboratory of Trieste).

On the other hand, on the negative side, there has been the destructive impact of the industrial crisis on applied research laboratories with great traditions, such as the Ilva center for the development of materials, the Donegani, the Temav, and the Terni laboratory, etc. We are running the real risk that the relaunching of production, of which there are now concrete signs, will find itself without the indispensable support, in the materials field, of these laboratories, that have either been put into liquidation, or are in profound crisis.

[RICERCA E INNOVAZIONE] In the light of the experience gained from the old plan, what will be the innovative aspects of the new one, both with regard to obtaining funding, and so that everything connected with research will function properly?

[Rizzuto] The new plan should be focused more onto the aspects that are close to the strategic choices of the industries that use materials, particular attention being paid to the innovation of products and processes, both traditional and new.

The funds that are distributed under this plan, should tend to be oriented toward the acquisition of a capacity to attract further resources, for example research programs and structural funding from the European Union.

From this point of view, the close involvement, and synergy, of research bodies and industry will be essential.

In addition, as far as the role of certain laboratories and projects is concerned, a special effort must be made to improve the correlation between the research being carried out and the problems of small- and medium-sized industry.

[RICERCA E INNOVAZIONE] The old plan entrusted a leading role in research concentrating on innovative materials to the INFM, both as far as the coordination of the existing resources with those that were to be created was concerned, and with respect to the utilization of large international structures. How has this goal functioned?

[Rizzuto] I think that the INFM has carried out its role very well, coordinating the major part of university resources, and linking them both with the industrial problems put forward in the plan, and with the European community's projects concerning materials. This has contributed, in no small way, to the increase in Italian participation in European community projects.

The INFM has also worked in collaboration with some of the CNR laboratories, and with the interuniversity materials chemistry consortium, to make the analytical capacity of the major laboratories, that is now giving its first results, available to be used by industry.

[RICERCA E INNOVAZIONE] Mezzogiorno [government aid scheme for southern Italy]—consortia—scientific parks. Why do they represent the road to success for this type of research? What will their place be in the new plan?

[Rizzuto] Research into innovative materials and the technology of innovative materials is of the propagating type. Its results, and possible industrial innovations, can be applied in extremely different fields of activity, and can concern industries of every type that are sometimes located far from the research centers.

A network of technological parks and service centers, linked with consortia and university research bodies on one hand, and with industry, including small industries and craftsmen on the other hand, can make liaison easier between the different organizations, that must interact for an effective transfer to be made, if it is well developed and active.

In this context, the need to train a type of personnel, able to combine intellectual mobility with the ability to create closer links between research and production, must not be forgotten. The technological parks have functioned as growth centers for this type of training in some countries, and we would like this to be the case in Italy, too.

## France: PSA, Fiat Launch Sevelnord Automobile Plant

*95WS0043A Paris INDUSTRIES ET TECHNIQUES in French Oct 94 p 15*

[Article by Thierry Mahe: "The Fiat-PSA [Peugeot Automobile Company] Key Plant"—first paragraph is INDUSTRIES ET TECHNIQUES introduction]

[FBIS Translated Text] *Sevelnord, in Valenciennes, manufactures minivans for the two automobile groups. Fewer robots, higher quality.*

A new automobile plant is something that Peugeot-Citroen had not seen in 20 years, i.e., since the opening of the Aulnay site. This is no small event. On 16 May 1994, the Sevelnord plant in Valenciennes was inaugurated with great pomp by the entire staff of PSA and Fiat, joint shareholders of the Sevel group. At Valenciennes, they produce the first minivans of the French-Italian group, variously sold under the names of Peugeot (806), Citroen (Evasion), Fiat (Ulysse), and Lancia (Zeta). These high-end vehicles are launched on a growing but already quite cluttered market: Renault Espace, Chrysler Voyager, and the forthcoming model jointly produced in Portugal by Ford and Volkswagen.

The nominal production volume is around 500 vehicles per day. The effort made by Fiat and PSA was commensurate with the event: 6.3 billion French francs [Fr] of investment, six years on the drawing board, and 1,800 people working on what was France's largest industrial site. It is a triple challenge—technological, industrial, and commercial—that PSA is meeting, since it is essentially new teams (recruited by preference in the North region) that will operate the new plant producing the new vehicle. Actually, it would be more accurate to speak of three plants: paint, iron work, and assembly, housed in different buildings. Now numbering 2,000, the employees will be 3,500 in 1995.

Staking all on quality, the plant designers relied on human skills rather than all-out robotization. This is especially true of the iron-work plant (body-parts assembly) where less than 50 percent of the operations are performed by robots, compared with 80 or 90 percent at other sites. Because the production volume did not warrant full automation, considerable thought was given to improving working conditions. Undeniably, tasks are less difficult to perform here than in any other automobile plant. Halfway between the fully-robotized work station and the manual work station, a new ergonomic concept has surfaced, in which the operator remains in charge of his movements but is assisted by a manipulator arm to handle heavy or bulky parts. As a consequence of this approach, PSA has undertaken an unprecedented training effort in each of the 50 trades that work together at Sevelnord. Roger Garnier, the plant manager, indicated: "Manual work was retained whenever working conditions and quality level were guaranteed. Above all, we designed simple and efficient industrial means, in keeping with production volumes, without useless sophistication, and thus guaranteeing a high quality level." A very current reasoning, which is given full scope here. Real-time logistics, on the other hand, is still as topical as ever. Around the plant, a host of "proximity sites" have been set up, the local production units of many PSA-Fiat equipment manufacturers: Ecia, Treve, Manducher, etc., are at the plant door, delivering their equipment just in time, directly to the assembly line.

## German-Russian Cooperation in Manufacturing

### Sandvik-MKTS Activities

*95WS0047A Berlin INGENIEUR DIGEST in German Nov 94 p 6*

[Unattributed article: "Investment in Russia"]

[FBIS Translated Text] Sandvik has acquired more than 50 percent of the shares in the largest hard metal manufacturer in Russia, the Moscow Tverdih Splavlov Combine (MKTS). For 20 years Sandvik's Coromant business section has been collaborating with MKTS, which produces and sells hard metal for metal-cutting tools, rock-drilling heads and wearing parts and which, with 1,200 employees, had a turnover of 40 million German marks in Russia and other CIS states in 1993. For Sandvik International the acquisition of a majority in MKTS is a key to the long-range buildup of a strong position in the Eastern European market. According to Claes Hedstrom, the new president and CEO of Sandvik, modernization of the metal-cutting sector in that market is "a basic prerequisite for increased productivity and quality."

Sandvik Coromant in Duesseldorf has just brought a new tool tip program for Type CD 1810 to the market. The result of the thin diamond coating in combination with already introduced cutting geometries is a cutting tool which is intended to achieve "pioneering results" (Sandvik) in processing NE metals such as aluminum, copper and magnesium alloys, as well as compound materials. The new tool tips assure excellent cutting control and surface quality as well as considerably reduced cutting effort. The service life will be extended by up to 10 times.

### Technology Transfer

*95WS0047B Berlin INGENIEUR DIGEST in German Nov 94 p 13*

[Interview with Gennadi V. Kozlov, deputy minister for Science and Technology Policy of the Russian Federation: "A Lack of Information"]

[FBIS Translated Text]

[INGENIEUR DIGEST] How do you judge the present level of cooperation between Russia and Germany in the field of technology, research and innovation?

[Kozlov] Good contacts and cooperation in scientific research already exist between scientific organizations

and individual scientists from Russia and Germany. Right now, active cooperation has also begun in the field of commercializing the scientific research and know-how. I think that there are still much greater possibilities for this in Russia and Germany. I see particular prospects for cooperation in working out high-tech developments for small and medium-sized enterprises.

[INGENIEUR DIGEST] In your opinion, which obstacles to the expansion of cooperation agreements must still be eliminated by the two sides?

[Kozlov] For me, what is in the foreground is not the obstacles, to begin with, but primarily the favorable conditions for the development of cooperation between our countries in the fields of technology and innovation. The decisive factor for this is, one, the change in the political situation in Russia and the progress in the market economy in our country. Two, relations between our countries have improved a great deal since the German reunification. A great deal of interest is shown by business people and executives in our two nations in the development of the economic cooperation. We actively support this.

[INGENIEUR DIGEST] So everything is OK?

[Kozlov] No, there are still many difficulties in developing cooperation in research and technology, of course. In my opinion, there are three basic problems: First, it is the reliability of the partners in the two countries in implementing joint research and development projects. A more careful selection of projects and partners as well as continuous control of project completion is necessary. Through the Ministry for Science and Technology Policy, as well as through various innovation funds, the Russian side guarantees significant financial help for joint Russian-German projects. Unfortunately, there is often a lack of information on both sides. This can be overcome through joint seminars, exhibitions and meetings. In Russia information centers with data bases are now being established for innovation projects. In this context I very much welcome the technology exchange in INGENIEUR DIGEST. We will support this activity and are also calling on German institutions and industry for this.

[INGENIEUR DIGEST] What other obstructions are you finding?

[Kozlov] The second obstacle is linked to the weak development of the infrastructure in Russia which is necessary for the innovation activity. Here some very active development work must be undertaken, particularly in the sector of small companies. A special government program with considerable funding has been in place for a short time. It involves the organization of innovation business centers, consulting firms and the development of technology parks. I believe that the cooperation with Germany in this field can be of major help to us.

[INGENIEUR DIGEST] And problem number three?

[Kozlov] The third difficulty is the lack of experience by Russian businessmen in international innovation activity. To be sure, such experience will become richer over time, as a result of practical work, but it must be specifically promoted. This fall a seminar for Russian managers of innovative enterprises will be held in Moscow. Highly skilled German experts will there demonstrate special legal features in contract preparation as well as marketing and development strategies for small companies.

[INGENIEUR DIGEST] German companies often deplore the uncertainty of investments and bureaucratic hurdles in Russia. How do you judge these obstacles?

[Kozlov] Yes, I know that there are problems when Russian entrepreneurs exaggerate or try to put forward unrealistic expectations during contract negotiations. In order to help avoid such misunderstandings, we are planning to establish a system for selecting and preparing German-Russian R&D projects. The evaluation of each project and its sponsor will also be a part of this.

[INGENIEUR DIGEST] What do you recommend to German managers?

[Kozlov] You should always find out in advance about a potential partner from the Russian government and public institutions that are immediately connected with the innovation activity, meaning from the branch ministries, from my Ministry for Science and Technology Policy, from branch academies or from the Russian Innovation Association.

[INGENIEUR DIGEST] You plan to put on an exhibit of Russian technologies in Berlin in November. What will be on display there and what expectations do you have for the exposition?

[Kozlov] The "New Technologies in Mechanical Engineering" exhibition seminar displays about 50 technologies for various branches of mechanical engineering, among them automatic production systems for the manufacture of various machine parts, original robots and systems for producing alternative energies. Some technologies are connected with environmental protection, for example methods for processing old automobile tires and purification of industrial waste water. The purpose of the exhibition is to search for German partners for joint commercial utilization of the technologies offered.

## Strategic Importance of Philips CE's EDI Center Reviewed

*95WS0049A Paris 01 INFORMATIQUE in French 21 Oct 94 p 39*

[Article by Christine Peressini: "Management: EDI [Electronic Data Interchange], a Strategic Orientation at Philips Consumer Electronics"—first paragraph is 01 INFORMATIQUE introduction]

[FBIS Translated Text] *Philips Consumer Electronics [CE] has set up a European EDI expertise center. Its role is to provide consulting and support services in developing an "information superhighway" within and outside the corporation. The expertise of the French subsidiary warranted setting up the center in France.*

Since 1992, EDI has assumed strategic importance for Philips CE. In fact, the group has set up a European EDI expertise center to develop exchanges with the outside using consistent tools. The center will provide EDI consulting and support services to Philips' various European sites; it will also advise and motivate its partners. It helped start up EDI platforms in the United Kingdom, in Belgium, in Italy, and in Spain. Some 15 sites will be equipped by 1998. The center has a staff of 8 to 10, including 5 full-time employees hired from the French subsidiary's data-processing department. Two of them were assigned, among other things, to research and development. The center's expertise was progressively broadened to include all of the company's so-called "information superhighway" data flows: EDI as well as E-mail, videotex, and electronic document processing and workflow. This full-time team is reinforced by outside service providers. The center operates on an annual budget of 3 million French francs [Fr].

Initially, back in 1975, the manufacturer set up an internal enhanced messaging service that, by 1983, became a private SNA [Systems Network Architecture] value-added network called COMBS (Customer-Oriented Message-Buffering System). These internal exchanges still rely for the most part on a proprietary standard (COPS—Connection of Processing System). A small part is handled in the Edifact format.

The development of external EDI by major activity sectors highlighted the expertise of the French subsidiary in 1992, especially when the logistics loop was completed, from ordering through Philips CE distributors or automobile manufacturers (direct purchasers of car radios), to product delivery by the carriers.

The goal was to "reduce lead times from five to two days," we were told by Jacques Goussu, head of the European EDI expertise center based in Suresnes.

Qualitative aspects were equally important. This meant "better quality and information security at all levels of the chain, leading to customer's satisfaction."

The French experiment (initially on microcomputers) actually determined the parent company to set up, in France, this center which is destined to become the "engine of both internal and external EDI development." What is its mission?

### The Future? An EDI Client-Server Architecture

Its mission is to recommend tools to be used in common as well as means, and also to define localized messages. Its R&D activity takes place in relation with the Edifact Board and Editransport in France. Thus, research is now in progress to integrate images in an EDI message. Until now EDI messages were text only. The plan is to integrate photographs of Philips products (with inset technical data) into the product data messages sent by the manufacturer to its distributors. That, however, will require "finding suitable tools for image compression" in order to transmit these data. For order taking, until 1992, the French subsidiary successfully used the Tolas business management software of GSI [General Company for Data Processing Service]. This software became the group's reference software. But it would run only under VMS [virtual memory system]. For reasons of "consistency," the EDI solution will be implemented in the same environment. The European EDI center recommended a Microvax-based EDI-dedicated platform for all of the manufacturer's European subsidiaries—in this case Digital's Decedi software. As Jacques Goussu explained, "At the time, DEC was the only one in the VMS world to provide a complete EDI package." In fact, the Microvax is equipped with an application integrator (Filebridge) that, among other things, makes it possible to retrieve on the EDI platform Tolas files hosted, for instance, on a VAX-7000 at the French subsidiary. The two machines are connected via Ethernet, using TCP/IP [Transmission Control Protocol/Internet Protocol]. To this application interface is added an API (application programming interface) which provides preformatting, translator, and communication layers. To facilitate external exchanges with any type of partners, the communication interface will provide access to most of the leading international value-added networks (Geis, IBM IN [Information Network], Atlas 400, Tradanet, etc.) including Philips' internal network.

This EDI platform also supports various specifications and standards for exchanges with several activity sectors: distribution (Gencod and Eancom); transportation (Inovert/IFTM—International Forwarding Information Transport Message); automobile manufacturers (Odette/Galia); and suppliers (Edifice). "The Microvax can support both EDI types," Jacques Goussu indicated. In addition, internal messaging transits the EDI platform. To acquire the means to develop its exchanges with its foreign partners, the French subsidiary of Philips, Consumer Electronics, invested Fr250,000 (Fr100,000 in the Microvax, and Fr150,000 in software) and it employs one full-time person all year long.

The last link in the EDI chain is currently being set up. It involves the relation between the five Philips production centers located in France and suppliers (component

suppliers for instance). The Decedi platform is not a set choice for the future. According to the head of the European center, the future lies "in the Unix world, with an EDI client-server architecture," consistent with group deliberations started at application level. The EDI resources of Philips CE could thus be distributed among its factories, its marketing organizations, its regional structures, and the parent company. The first development could come from the Tolas order-taking tool, the next version of which (Tolas Open) should work according to the client-server model. "We shall then consider the EDI client-server offer," Jacques Goussu pointed out. He added: "Today, with the price of Unix machines going down, we can consider this development. Especially as the market offers many software-development environments running under Unix, at interesting prices." He went on to say: "In the VMS world, using EDI tools will require considerable systems expertise, involving a training period of two to three weeks. Paradoxically, this implementation takes less time under Unix."

**[Box, p 39]**

**Advice From Jacques Goussu, Head of Philips CE's European EDI Expertise Center**

- Any company wishing to exchange electronic data with its distributors, customers, carriers, or suppliers must engage in a true partnership relation with them.
- EDI requires looking far ahead and starting small. EDI must reflect a genuine corporate strategy. This means that management must be involved. Using models, you can demonstrate how the partners will be linked, and therefore weigh the benefits and drawbacks of the project.
- To implement EDI relations, you must not think only in terms of EDI flow, but in terms of flow, period. Actually, it is an "information superhighway" that you are implementing in the company and to which you will connect GED/workflow, E-mail, EDI, telecopier, and other flows. In addition, this internal superhighway will communicate with the outside.
- EDI must be integrated neutrally into the information system. This means that the EDI implementation must not, for instance, entail a modification of the databases of existing systems.

## Better Times for German, French, Dutch Chip Makers

*MI2211131194 Leinfelden-Echterdingen COMPUTER ZEITUNG in German 27 Oct 94 p 10*

[FBIS Translated Text] The three major European semiconductor manufacturers, too, are benefiting from the worldwide boom in chips. After the barren wastes of the eighties, much better times are now beginning for Philips, SGS-Thomson, and Siemens.

Siemens AG in particular has reason to rejoice. The semiconductor division of the Munich-based electronics giant has made immense losses for 10 years: Siemens managers have never revealed specific figures, but the deficits have often run into nine figures. It was in the red by about 500 million German marks [DM] in the 1991/92 business year alone. Those days now seem to be over. According to Juergen Knorr, managing director of the semiconductor division, the corporate balance for the 1993/94 business year, which closed on 30 September, will show the semiconductor division in the black for the first time. What is more, sales are said to be up from DM2.1 to 3 billion.

Siemens has thus reaped the first benefits of the extensive salvage program that the Siemens board imposed on the chip division three years ago and which has now been completed. In the wake of this restructing, the product range has been streamlined and manufacturing has been relocated to the two factories in Villach and Regensburg (Munich has been closed down). Drastic staff cuts have also been made.

Now that the leap into the profit area has been achieved, the semiconductor team is raring to go. "We want to be the market leaders in Europe," says Knorr, setting a challenging target. Indeed, in order to achieve this goal, Siemens will have to overtake not only Philips, but SGS-Thomson as well. Both companies are also looking very ambitious at the moment in the light of the positive trends in their chip business and the lucrative markets, such as multimedia and mobile radio, that are now emerging. The Dutch electronics group showed growth of about 9 percent in semiconductor sales to the equivalent of DM3.5 billion in 1993—and 1994 business trends to date indicate that Philips is capable of rising to even greater heights. Franco-Italian chip manufacturer SGS-Thomson achieved sales equivalent to DM3.2 billion in 1993, a 30-percent increase over the previous year. The signs for the company headed by Pasquale Pistorio are still pointing upward as well, a fact that led the former Motorola manager to announce not long ago that he intended to see SGS-Thomson among the world's six major chip manufacturers by the end of the century. The Franco-Italian joint venture currently ranks 14 with a world market share of 2.4 percent, thus lying two places behind Philips (2.7 percent) and four ahead of Siemens (1.8 percent).

The fact that the leading lights of the European chip industry are taking their plans for growth seriously is underlined by the efforts that they are making in terms of infrastructure. Since fall last year, SGS-Thomson has had one of the most advanced 8-inch wafer factories in Europe, and now it even intends to reactivate its dormant works in Phoenix, Arizona. Philips is in the process of considerably expanding the capacities of its semiconductor factories in Nijmegen and Hamburg, in which it is investing heavily. Building work on Siemens' new chip factory in Dresden, where 16-megabit DRAM's [Dynamic Random-Access Memory] will already be in production in 1995, to be followed subsequently by 64-megabit memories, is in full swing, in addition to which the extension to the Regensburg production facility, which produces 4-megabit DRAM's, will be completed by the end of 1994.

## EC Approves French Government Contribution to Bull's Privatization

*95WS0034C Paris LE MONDE INFORMATIQUE in French 14 Oct 94 p 6*

[Article by Philippe Rose: "Bull Case: Green Light From Brussels"]

[FBIS Translated Text] The European Commission has finally authorized the French Government to inject 11.1 billion [French] francs [Fr] into Bull's capital as planned. It feels that the recovery plan being implemented by the manufacturer is "satisfactory" and that the amount of aid requested is "proportionate to the restructuring effort." Its decision is based on a favorable recommendation by Karel Van Miert, commissioner for competition.

The inquiry into the group's recapitalization began last 26 January, and payment of the final installment (Fr3.1 billion, including Fr600 million for France Telecom), which has been blocked since that date, can finally be made. The audit entrusted to Arthur D. Little by Brussels weighed heavily in the balance. That U.S. auditing firm recommended rapid privatization, something that depends necessarily on recapitalization.

Incidentally, the principle of recapitalization brought scarcely any hostile reaction from other large computer firms in Europe or from the other countries in the European Union. The exception was Great Britain, which merely issued a protest. Such an operation has a real chance of success. The manufacturer's half-year results showed improvement, with a spectacular reduction in losses (Fr843 million, compared to Fr1.98 billion in 1993), major agreements signed with Motorola and Tandem, and a sale of assets to Wang. The call for tenders in connection with privatization will be issued next November. The amount to be sold by the state has not been decided, but Jean-Marie Descarpentries is arguing that the state should control only 10 percent of the capital.

It remains to find some partners. For one thing, it will be necessary to persuade the existing shareholders (especially IBM and the NEC [Nippon Electric Corporation]) to ante up. For another, new candidates must be found, preferably among the manufacturers. Why not round out the agreement with Motorola regarding Unix with a financial component? That is a reasonable question. All the more since the American semiconductor and telecommunications giant is enjoying brazen financial health. But the discussions now underway reportedly concern about 20 "prospects."

For his part, obviously, Minister of Industry Gerard Longuet expressed immediate satisfaction with the decision reached by Brussels authorities. He noted in particular that "Bull's recovery, which has been underway for the past year under very difficult conditions, has now taken several decisive steps. The challenge of financial equilibrium and privatization is about to be met." Longuet also confirmed that the Privatization Commission would soon be presented with the Bull case. It will have to decide on the procedure to be followed after the call for bids is issued.

## France: Bull Privatization Seen to Require Additional Partners

*95WS0049C Paris 01 INFORMATIQUE in French 21 Oct 94 p 6*

[Article signed V.R.: "Strategy: Bull in Search of Shareholders"]

[FBIS Translated Text] At the seminar on "The Stock Exchange Meets the Computer Industry," Jean-Marie Descarpentries, chief executive officer [CEO] of Bull, indicated, speaking of Bull's forthcoming privatization, that he wished "to attract a complement of industrial partners, if possible with a European majority, and with no one acquiring a controlling interest." These partners will have to be among the three leading players on the seven markets targeted by Bull, and will come "from the computer, telecommunications, and radio and television industries." Although, in a first stage, privatization is to be achieved by mutual agreement, the Bull CEO did not rule out selling shares to the public in the near future. He also thanked his competitors for not opposing Brussels decision, taken last week, to authorize Bull's recapitalization. As an incentive for shareholders to answer the invitation to bid expected to be issued around mid-November, Jean-Marie Descarpentries counts on the group's recovery "which will involve neither the sale of jewels, nor the sale of activities with abysmal losses." Operating results, he believes, will be positive during the second half of 1994, amounting to 3 percent of sales. Just enough to achieve operational balance for the year 1994. Although he acknowledged that "Bull has still not reached the critical size in Europe, in services," the Bull CEO hopes, little by little, to reverse the proportions of hardware and software/services sales (respectively 60 and 40 percent of the sales volume). In addition, Jean-Marie Descarpentries let it be known that partnerships would get to move faster. On the one hand, in multimedia; on the other hand, in microcomputers, with an Asiatic supplier. Finally, he expects to extend Bull's VAR [value-added reseller] and OEM [original equipment manufacturer] networks in order to boost sales.

## France: Firms Interested in Bull's Prospective Privatization

*95WS0032A Paris LE MONDE in French 26 Oct 94 p 18*

[Article by Caroline Monnot: "Denying Having Made Any Offer, Quadral Expressed Interest in 'Some Parts' of Bull"—first paragraph is LE MONDE introduction]

[FBIS Translated Text] Even before the invitation to bid is issued, Bull's privatization is turning into liar's poker. Apart from candidates that have been approached, like the Japanese NEC and the American Motorola, and

from France Telecom's forced continued participation, computer industry circles mention only two other French applicants. Only one name is known: Quadral, the holding company that controls CSEE [Electric Signal and Equipment Company] whose president is Yazid Sabeg.

The supervising ministry is positive. Quadral is indeed interested in acquiring an interest in Bull. "Their application will be studied in detail, without prejudice," people familiar with the dossier explained. In the past few days, that assumption has caused a stir in the small French computer world. "A solution involving Quadral is tantamount to carving up Bull in order to sell it," a former manager of the French computer group recently warned.

Extensively restructured during the eighties, CSEE—initially a specialist of railroad signalling, in which Quadral acquired a 44-percent interest following a rather hotly disputed takeover bid in 1992—has identified systems integration and network-architecture design as a priority development orientation. Quadral may naturally be interested in Bull's activities in these two fields. Rather extensive negotiations for such a rapprochement were started by Mr. Sabet and Bernard Pache, Jean-Marie Descarpentries' predecessor as Bull's chief executive officer [CEO].

The problem is that Quadral denies having made any offer or shown any intention concerning Bull's future privatization. Nevertheless, they confirmed: "We are in fact one of the 15 or so companies to which Bull's two bank consultants—Suez and Warburg—have sent information memorandums. But we have absolutely not made a decision yet," Yazid Sabeg stated. "To say that Quadral is an applicant in Bull's privatization is just a pious wish. It is true that we are interested in some parts of Bull. But we have not made any offer because we know nothing about the procedure adopted. There is a lot of confusion. The government actually does not know where they are heading. Do they wish to find a global solution, a takeover by a consortium, a takeover by activities? Nobody knows anything."

The problem of the future composition of Bull's capital is therefore far from being solved. NEC, who intends to bid, has not given details as to its intentions. Last spring, the supervision ministry made another attempt. According to someone familiar with the dossier, they adopted a completely open attitude. In other words, if the Japanese manufacturer wanted to acquire a large interest in the French group's capital, that possibility would not be ruled out. "They realized that NEC was very much Japanese-centered and that expansion in Europe, in the computer industry, was not one of its priorities." To the great relief of the Bull management and Mr. Descarpentries. Anyhow, they did not favor the possibility of a global takeover. Motorola was approached but did not indicate under what conditions it might get involved. The government has only 15 days left—if the timetable is to be complied with—to sort out the real intentions of all the parties before issuing the official invitation to bid.

### France: Bull & CISI's Athesa Common Subsidiary's Prospects

*95WS0049B Paris 01 INFORMATIQUE in French 21 Oct 94 p 8*

[Article signed V.R.: "Infomanagement—Athesa: Difficult Implementation by Bull and CISI"]

[FBIS Translated Text] The engagement between Bull and CISI [International Data Processing Services Company] in the infomanagement field is slow to materialize. It was announced in December 1993, but the respective contributions of the two companies are expected to be ratified only in two weeks from now, at a general meeting of Athesa (their joint French subsidiary of which each partner will eventually own one half). "With CISI, I find that things do not go fast enough," Jean-Marie Descarpentries, chief executive officer [CEO] of Bull, pointed out, indicating that other French shareholders might acquire stakes in the subsidiary, without however saying when. In addition, the Bull CEO announced that new FM [facilities management] contracts were about to be signed in the United States, including one with a partner.

In France, the appointment of Jacques Weber (assistant general manager of Bull's strategy and business-development unit) as Athesa's chairman of the board could speed up things, since he is the one who negotiated the partnership agreement with CISI. He succeeds Jacques Tordjman, who remains CEO of the Athesa International holding, while Claude Moireau, from CISI, remains general manager of the French subsidiary. "We had to bring the agreement to completion and implement a strategy for Athesa France. Now it is done and it is normal that I should relinquish the presidency," Jacques Tordjman explained. He will therefore devote his time to setting up units outside France, which will eventually become subsidiaries.

Divisions have already been set up in the United Kingdom, Benelux, and Spain, and negotiations are in progress in Italy. The board of Athesa International could be complete by the end of the year; it should include industrial or financial partners who will acquire stakes in the company and farm out their data processing to it. These partners—there will probably be three of them—should contribute annual sales volumes of 500 million French francs [Fr] for one of them, between Fr50 million and Fr100 million for another, and around Fr20 million for the third one. It is also not impossible that, in the future, Athesa International might take control of Athesa France and that CISI should acquire a stake in the holding company.

### France: Results of Bull Restructuring Summarized

*95WS0059B Paris LE MONDE INFORMATIQUE in French 28 Oct 94 p 6*

[Article by Philippe Rose: "Bull's Recovery Continues"]

[FBIS Translated Text] Already perceptible during the first half of the year, the improvement of Bull's financial situation continues. By the end of September, sales had increased by 9 percent, to 19.9 billion francs [Fr]. If we include the contribution of the partnership with CISI [International Data Processing Services Company], which will be consolidated into the infomanagement division at the end of October, the growth rate was 10.3 percent. Orders surged by 19 percent, especially for large business servers (+43 percent), Unix systems (+26 percent), and the microcomputer sector (+64 percent). For professional services, the growth rate was +35 percent.

The net current result, too, looks better: the net loss, before the Fr710-million provision for restructuring costs made at the end of June, amounted to Fr1.51 billion, compared with Fr3.57 billion last year. In addition, carrying charges were reduced by Fr577 million; they now amount to 2 percent of sales, compared with 5.3 percent in 1993. Jean-Marie Descarpentries estimates that this improvement "owes nothing to chance and that the 1994 fiscal year will end with a balanced operational result." The recapitalization of the Bull group was just authorized by Brussels, and the invitation to bid for its privatization will be issued some time in November.

### France: Bull To Continue Mainframe Systems Development

*95WS0034B Paris LE MONDE INFORMATIQUE in French 14 Oct 94 p 5*

[Article by P.A.: "Mainframes: Bull Continues Effort"]

[FBIS Translated Text] Bull will do everything possible to ensure the coexistence of its mainframe computers with "open" environments. Its Distributed Computing Model (DCM), which dates back to 1990, already reflected the main lines of that strategy. Today, as the dust raised by the rush to customer-information services begins to settle—and as the freeze in orders for large systems that was brought on by the economic crisis begins to thaw—it is becoming possible to set a definite course. That is what the manufacturer has just done with a "statement of direction" in which it details its plans for integrating its two new GCOS [Global Climate Observing System] lines into the complex information architectures which, in the firms, are gradually replacing the simple pyramidal structure once dominated by the mainframe. Bull's intention is to offer a company customer-information service environment closely linking GCOS and Unix at competitive prices.

To achieve that "fade in/fade out," the manufacturer has identified three types of technical requirements: a very high degree of interoperability, very wideband communications, and less expensive hardware platforms for computation and storage. Bull has allocated an R&D budget of about 1 billion francs to those three development areas.

The purpose of the Stella program is to produce the DCM model with a set of ready-to-go solutions for interoperability. Part of that program has already been delivered or will be before the end of the year with the incorporation of GCOS systems into the DCE [Data Circuit-Terminating Equipment] environment, thus providing an Ingresnet (DDA)-based means of access to multi-DBMS [data base management system] data and the host interfaces ensuring interoperability between Bull's transactional monitors and those used in the world of Unix (Tuxedo).

In addition, the ISM [Integrated System Management] Division provides the integrated management environment making the overall management of architecture comprising GCOS and Unix systems possible. The next stage, in 1995, will see the first complete implementation of Stella with the supplying of an FDDI [fiber distributed data interface] link between GCOS and Unix machines in the Escala series, interapplication communication mechanisms combining synchronous and asynchronous technologies, and development tools offering an "object" vision of GCOS procedures.

The Mainway project, which constitutes the second component, is concerned with very high-speed communications. In fact, Bull is preparing a complete overhaul of all its communication products, in which TCP/IP [transmission control protocol/Internet protocol] will be the common denominator and which will be based on multiprotocol network information services intended to exploit "fast" technologies (FDDI, frame relay, and ATM [asynchronous transmission mode]) while preserving compatibility with Datanet.

Lastly, in the matter of costs, Bull will continue and extend to GCOS-8 the conversion to CMOS [complementary metal oxide semiconductor] technology that it began with its DPS-7000. For its Auriga-II, Bull has designed the densest chip to date (5 million transistors). In 1997, the Jupiter project should result in the migration to CMOS of the middle-quality GCOS-8, something that would be unthinkable without carrying integration even further and making intensive use of multiprocessor technologies.

### France: Sligos' Half-Year Business Performance Reported

*95WS0034D Paris LE MONDE INFORMATIQUE in French 14 Oct 94 p 6*

[Article by Philippe Rose: "Sligos: Results Down Sharply"]

[FBIS Translated Text] Despite a 12.9-percent increase in turnover (2,012 million [French] francs [Fr]) that was sustained more by engineering and microelectronics

than by electronic banking and means of payment, Sligos found its operating results plunging during the first half of the year.

Operating profits were down by 30.9 percent (Fr95.7 million, compared to Fr138.4 million in 1993). For their part, net profits totaled only Fr13.1 million, a drop of 79 percent. Besides conditions in the computer services market, where prices have dropped by around 5 percent, Sligos was faced in particular with very mediocre yields from its financial investments (it even lost money on its bond investments) and experienced a considerable delay in orders for phonecards for export. "The second quarter [as published] will be better," Henri Pascaud guarantees, especially since reserves for the elimination of personnel (Fr40.7 million) will disappear. For the fiscal year as a whole, Sligos should report a turnover of Fr4.1 billion, compared to Fr3.1 billion in 1993.

Pascaud expects, however, that 1994 profits will be less than those in 1993 (Fr160.6 million), "since the necessary jump is too big." Commenting on a possible sale of shares by the Lyons Credit Bank (which holds a 58-percent interest in Sligos through the holding company Clio), the number one software engineering firm pointed out that a "sale of Sligos by the Lyons Credit Bank, whether complete or partial, is not on the agenda." Does the bank have any interest in making such a sale in the short term? That is not certain, partly because Sligos, like the CCMX, in which the Lyons Credit Bank has an 85-percent interest, is continuing to show a profit.

Incidentally, the bank has just reaffirmed its intention to retain majority control of the CCMX. Besides, it would be more logical for the Lyons Credit Bank to begin by rationalizing its minority or nonstrategic holdings, which are much less profitable. Particularly in the area of maintenance (through Tasq, over 90 percent of whose capital is owned by Clio) or in Cerg or Steria. In the long run, the uncertainty will have to do more with the financial situation of the Lyons Credit Bank and the attitude of the state, which as a shareholder might impose a more thorough restructuring of the bank's holdings in the computer services area.

## France: Software Industry's Business Performance Reported

*95WS0059C Paris LE MONDE INFORMATIQUE in French 28 Oct 94 p 38*

[Article by Philippe Rose: "Services: The French SSIIs [data-processing services and engineering companies] Have Overcome the Crisis"—first paragraph is LE MONDE INFORMATIQUE introduction]

[FBIS Translated Text] *According to Eurostaf, the French SSIIs have withstood the shock of the early nineties. They did so by specializing and improving their balance sheets.*

"We were pleasantly surprised by the stamina of French SSIIs," Francoise Jabouille-Huchot, Eurostaf financial analyst and author of a study on the SSIIs, told us.[1] In support of this statement, three essential observations. The first one is about costs, which, as a whole, remained well under control. Within the sample of 18 leading SSIIs considered by Eurostaf, personnel costs increased by only 5.9 percent from 1991 to 1993. Staff numbers increased less than sales, hence increased productivity (562,000 francs [Fr] per employee last year). This in spite of continued external growth and a slowdown of users' demand.

Second indicator: added value, defined as the difference between sales and "intermediate consumptions." The added-value rate rose from 62 percent at the end of the eighties, to 63.7 percent in 1993. "It reflects the SSIIs' increased offer of intellectual services, precisely to meet the competition from other service providers, namely computer manufacturers," Jean-Marie Garnier, Eurostaf financial analyst, explained. The French SSIIs, therefore, continued to concentrate and specialize.

Third revealing element: the SSIIs boosted their equity capital (from 31 percent of the balance-sheet totals in 1989 to 35 percent last year), improved their cash flows, and reduced their debts. Thus, the debt burden, as a percentage of added value, declined from 29 percent in 1989 to 22 percent in 1993. This is a rather beneficial trend because, due to the fact that their activities are not very "capitalistic" [sic], the SSIIs cannot bear a heavy debt burden for long.

### Intensive Competition

In this rather rosy landscape, the only problem for French SSIIs lies in increased competition on the services market. "Computer manufacturers, telecommunication operators, software publishers, and consultants accounted for 17.9 percent of the 10 leading French SSIIs' sales in 1992," Jean-Marie Garnier noted,., "They now account for 33 percent." After enjoying a dominant position for years, French SSIIs now find themselves on the defensive, faced as they are with competitors who possess two major assets: leading-edge expertise (in the case of manufacturers and operators) and strong financial and geographical bases.

Eurostaf consultants calculated that the total sales of their representative sample of 18 SSIIs increased by 6.5 percent per year from 1989 to 1993, whereas the total sales of "newcomers" surged by 23.5 percent. Computer manufacturers, in particular, intensified their breakthrough: "IBM's service pole is now worth over Fr4 billion, placing it ahead of CGS [Cap Gemini Sogeti], Clio, and FTLIS, to name a few," Francoise Jabouille-Huchot noted. This trend certainly made a hole in the net profit margins of service companies, which were close to 4 percent in 1993, but "this rate remains positive and relatively high when compared with other economic sectors," the Eurostaf study added.

**SSIIs Have Improved Their Balance Sheets**

| Sample of 18 French SSIIs | 1989 | 1993 |
|---|---|---|
| Equity capital (percent of balance-sheet total) | 31 | 35.2 |
| Financial debts (percent of added value) | 29 | 22.1 |
| Net profit margin (percent of sales) | 6.1 | 4.1 |
| Industrial profit margin (gross operating surplus/added value, percent) | 24.5 | 11.8 |
| Personnel | 45,373 | 59,088 |
| International sales (percent) | 15.5 | 17.7 |

Source: Eurostaf

In the intermediate term, the preservation of the SSIIs' competitive positions will depend on the economic recovery. "If there is a recovery, it is not likely to take place before the beginning of 1995," Francoise Jabouille-Huchot indicated. In this case, the financial improvements already completed will be sufficient to enable the SSIIs to retain their market shares and enjoy the full benefits of their specialization.

Actually, most leading companies in the profession have broadened their shareholders base, strengthened their backing by banking or industrial groups, and increased their penetration on international markets. Of the 18 SSIIs included in the sample, only two are not represented on international markets (CCMX and CEGID): the income derived from foreign markets by the other 16 companies accounted for 17.7 percent of their total sales in 1993, compared with 15.5 percent in 1991.

But if recovery is late in coming, will the improvements achieved in recent years be adequate? "Yes," according to Jean-Marie Garnier, "because they have an abundant positive cash flow, with nearly Fr2 billion for the 18 leading SSIIs, i.e., an average of over Fr100 million" per company.

**[Box, p 38]**

**First Signs of Recovery in Europe**

According to Input's latest estimates, the European software and services market will grow by 4 percent in 1994, reaching $95 billion. "Most software publishers and service companies benefitted from rising demand during the first half of 1994," Peter Cunningham, the Input president, observed. "This is the first sign of a resumption of growth."

But this trend is far from uniform, depending on what is offered. Network services and systems integration will experience two-digit growth, close to 15 percent, or even 25 percent for FM [facilities management]. On the other hand, system software and maintenance will not exceed 5 percent growth. By 1999, Input analysts forecast an average growth rate of 6 percent per year for the European market ($129 billion), with variations by services just as large as in 1994.

**Footnote**

1. Eurostaf: "Le march francais des services informatiques: l'avenir des SSII face aux nouveaux entrants [The French Market for Data-Processing Services: the Future of SSIIs as They Face Newcomers]. Study of a sample of 18 SSIIs representing seven market segments: Alcatel TITN [Information Processing—New Techniques], Altran, CISI [International Data Processing Services Company], Syseca, Soleri Cigel, Steria, Unilog, CGS, Sema, GSI [General Company for Data Processing Service], Sopra, Sogeris, Axime, SG2, Sligos, CCMX, Cegid, and Sinorg.

## France: Aerospatiale's Gallois Submits Company Restructuring Proposals

*BR1011092194 Paris AIR & COSMOS/AVIATION INTERNATIONAL in French 14 Oct 94 p 13*

[Article by Jean-Pierre Casamayou: "Change of Structure in View for Aerospatiale"]

[FBIS Translated Text] Aerospatiale President Louis Gallois revealed to the group's Central Works Council his initial ideas for a restructuring proposal. He wants to replace the current organization based on four divisions by the creation of "operation centers" which are closer to the idea of profit centers.

These new centers would group together one or two products corresponding to a well-defined market. This could mean the creation of an "Airbus Center" or an "ATR Center" or an "Ariane Center." These "operation centers" would be headed by a "branch office" or in other words "a strategic homogeneous space under the management of a director," the president explained. These branch directors would determine the strategy and decide on strategic objectives.

This reorganization, which has yet to be finalized, should nonetheless be under way by the end of the year. Other than more effective and profitable management, it would result in a more radical transformation of Aerospatiale. It is possible to imagine in the long term the group becoming a holding company with shares in different European companies specializing in helicopters, regional aircraft, Airbus civil aircraft, satellites, etc.

## France: Cap Gemini Sogeti Activities Readjusted

*95WS0032B Paris L'USINE NOUVELLE in French 20 Oct 94 p 41*

[Article by Franck Barnu: "Data-Processing: Cap Gemini Bets on the Second Infomanagement Wave"—first paragraph is L'USINE NOUVELLE introduction]

[FBIS Translated Text] Cap Gemini is refocusing on fast-growing markets. First example of this strategy: infomanagement, and in particular application management.

Block by block, Cap Gemini Sogeti (CGS) is rebuilding its trade. The leading SSII [data-processing services and engineering company], still not fully recovered (115 million [French] francs [Fr] in losses during the first half of the year, with 0.4-percent growth), is tackling a gigantic task: to switch from its traditional cost-plus-fee contract activities to the new fast-growing markets of the computer-service sector.

The first demonstration of this change is infomanagement. It is the most dynamic service sector. Service providers (SSIIs and hardware manufacturers) cannot get into it fast enough. Having missed the boat—it essentially owed its position in that sector to its takeover of the English company Hoskins—CGS had plenty of time to refine its strategy. At any rate, it invested "several tens of millions of francs in it" in the last two years.

CGS's development hinges on two axes. What it calls "application management" (applications maintenance) and "distributed computing services" (setting up, providing support for, and maintaining distributed systems). Its priorities, therefore, do not include operating infomanagement (hardware trade-ins) or the transfer of corporate computer specialists, which were the strong points of the first wave of what was then called "facilities management." "We do not intend to develop the infomanagement of large computer systems where we are not already doing so today," Eric Lutaud, the "group vice-president" indicated.

### A Broad Range of Services

By making these choices, CGS positions itself in the two activities that are the greatest problems for companies: application maintenance is an extremely heavy burden, while setting up and managing distributed systems is a veritable headache. These promising markets are also those where CGS may differentiate itself most clearly from what computer manufacturers have to offer.

CGS thus complements its traditional services with a broad range of services. It relies in particular on service contracts: the commitment to provide the client with a given level of service for a set price.

**Data-Processing Management: 20 Percent of Cap Gemini Sogeti 1995 Sales**

| | 1993 | | 1994 Estimates | | 1995 Forecasts | |
|---|---|---|---|---|---|---|
| | AM[1] | DCS[2] | AM | DCS | AM | DCS |
| European market (millions of dollars) | 800 | 950 | 960 | 1,100 | 1,200 | 1,300 |
| CGS Sales (millions of dollars) | 80 | 80 | 105 | 110 | 185 | 170 |
| CGS market share, percent | 10 | 8 | 11 | 10 | 15 | 13 |

Source: CGS, based on several market surveys.

1. Application management

2. Distributed computing services

Generating $225 million in 1994, application management and distributed computing services should account for a little more than 10 percent of CGS sales. The SSII counts on very strong growth in these two activities, which might account for 20 percent of its sales in 1995.

## France: Bernard Dufour Appointed New SNECMA President

*BR1811123594 Paris AFP SCIENCES in French 6 Oct 94 p 12*

[Unattributed article: "Bernard Dufour Appointed President of SNECMA"]

[FBIS Translated Text] Mr. Bernard Dufour was nominated by the Council of Ministers as president of SNECMA [National Company for the Study and Construction of Aircraft Engines]. He succeeds Gerard Renon who died on 7 September.

The new president of the engine manufacturer is a professional in the sector. Mr. Dufour, 61, was head of GEC-Alsthom's electro-mechanic division since 1992. A Polytechnic graduate, Mr. Dufour started as an engineer at Sud-Aviation before becoming director of the Aerospatiale plant in Toulouse where he supervised the construction of the Caravelle, Concorde, and Airbus. Nominated deputy director general of the SNIAS (National Industrial Aerospace Company), he resigned from this post one year later to join GEC-Alsthom.

## UK: Effects of Lucas Aviation Restructuring Analyzed

*95WS0032C Paris L'USINE NOUVELLE in French 20 Oct 94 p 40*

[Article by Alain-Gabriel Verdevoye: "Automobile: Lucas on a Slimming Diet"—first paragraph is L'USINE NOUVELLE introduction]

[FBIS Translated Text] Lucas is giving up its aeronautical activities to better focus on the automobile. The group's restructuring also affects France.

When Lucas announced that it was making a provision of nearly 2 billion [French] francs [Fr] for restructuring and extraordinary expenses, the City was stunned by the scope of the measure. All the more so as that pushed into the red the 1993-1994 operating result of the British automobile and aircraft equipment manufacturer. Lucas plans to refocus on basic trades, close sites, and reduce its work force.

George Simpson, Lucas general manager since last April, who deftly completed the rescue of the British automobile manufacturer Rover, has his eye on Valeo's profitability.

Top priority: the aeronautical industry, where the group enjoys a strong position worldwide in flight controls, especially for the Airbus, in jet engine control, and fuel-control systems. Excess production capacities are blatant. In France, the number of workers employed in that sector dropped from 1,400 two years ago to 950 today. A plant in Blois was practically closed. The Longjumeau plant is threatened. Lucas also considers regrouping the production of its two Asnieres plant on a new, far more modern site.

Lucas also intends to sell some of its assets. It has put on sale its U.S. subsidiary, Lucas Communications and Electronics, specializing in aircraft communications and too small to fight off its competitors, as well as Lucas Aviation (on-board systems). The Lucas Management Systems subsidiary (large-project management systems), which employs about 100 people in France, is also looking for someone willing to take it over.

In the automobile sector, much of the work has already been done. But layoffs will continue at the same rate. The group's total personnel dropped from 60,000 10 years ago to 45,000. Lucas intends to refocus on the automobile sector, which now accounts for 70 percent of its sales, compared with 63 percent one year ago. The leading manufacturer of disk brakes (not including those integrated in its own products), Lucas is also a large manufacturer of injection systems for Diesel vehicles. The head offices and engineering department of this division are located in Blois, France, where Lucas has a production plant.

**Recognized Knowhow**

The group's 1993-1994 losses should not hide the structural improvement of the operating result, which rose by nearly one half over one year. Thanks to the automobile.

In fact, the British equipment manufacturer now owns poles of excellence. The French brake plant, near Metz, for instance, is performing especially well. One thousand people manufacture 23,000 brakes per day.

In addition, Lucas enjoys recognized knowhow. This, in spite of quality problems in shipments to the U.S. Air Force, which are now the subject of a lawsuit and are dragging down the accounts. But the equipment manufacturer's No. 1 asset is its internationalization. Great-Britain now accounts for only 38 percent of sales, compared with 60 percent 10 years ago. Blois manages the plants dedicated to Diesel fuel-supply systems in Spain, India, Korea, Mexico, and... the United Kingdom.

In recent years, Lucas has also entered many joint ventures, in particular with the Japanese Sumitomo, in the automobile sector, to gain access to the transplant market. Other cooperations are being considered.

The City regularly echoes rumors of a takeover bid from the British BTR and T&N or from the German Siemens. Lucas issues denials. But George Simpson also denied until the last minute that British Aerospace was selling Rover.

## Germany: Manfred Bischoff to Head DASA

### Background

*95WS0057A Duesseldorf HANDELSBLATT in German 18 Oct 94 p 15*

[Article by Wieland Schmitz: "Bischoff Banks on 'Feasible Visions'"; Subheadlines: "Deutsche Aerospace Incorporated: Board Appoints New Board Director"; "Future DASA Director, Financial Officer with Scientific Background, Now Must Have Deeds Follow Words of His Predecessor on Restructuring of Europe's Aerospace Industry"]

[FBIS Translated Text] Munich, 17 October—Manfred Bischoff, finance director of **Daimler subsidiary Deutsche Aerospace AG [DASA]** has to resign himself for a while yet to being constantly compared with Juergen Schrempp, whom he is to succeed at the upper echelon of the firm. After all, it was the extroverted Schrempp who managed, with spectacular takeovers (**Fokker**), large cooperative projects and drastic personnel decisions, to become one of Germany's most well known managers.

It is another matter that much of Schrempp's public posturing, in the view of numerous observers, had to do with the fact that a solution to the succession of Daimler director Edzard Reuter was waiting in the wings. In any case, that will not constitute any basis for action by Bischoff, 52, since the topmost position is now filled for some time. At the DASA board of trustees [AR] meeting on Thursday, Bischoff is to be appointed as successor to Schrempp who will assume leadership of Daimler-Benz in May 1995.

The financial officer, with DASA since its inception in 1989, was publicly overshadowed by Schrempp. Insiders, however, knew that even then the dark-haired, solid-framed, mustachioed fellow born in Calw was playing a crucial role in all the company's decisions. He was the equitable but unyielding negotiating partner with employee representatives, politicians and company managers. Albeit alongside Schrempp he is not as active, the rather introverted Bischoff is the real "doer," besides helping carry on the operational business for a long time now and has consequently been, in fact, the acting director of the board. In this respect, continuity is assured at DASA.

The finance officer, who holds a doctor's degree, realizes that DASA is "a political enterprise" whose director has to maneuver in the political arena. He has to persuade politicians of the usefulness of the European Fighter Aircraft (EFA) or explain why Europe's aircraft manufacturers are capable merely of surviving if they get just

as much support as the Americans. But Bischoff assures that he "enjoys the contact with politicians."

The responsibilities confronting him are hardly less demanding than those in the Schrempp era. To be sure, the reengineering of DASA, that is to be called "Daimler-Benz Aerospace AG" after the AR meeting on Thursday, into a group having a market-oriented structure, has been mostly concluded. Even the long-standing dispute with the Dornier heirs has been quelled with a special Dornier dividend. The toughest personnel actions have been resolved and, not least, a financial package weighted in the billions was tied up for the shattered Fokker subsidiary.

Still, there is uncertainty, once the aircraft market recovers, regarding the type of long-term official space funding and armaments expenditures that can be expected. Bischoff also now, under rather aggravated market conditions, has to realize Schrempp's assertion that DASA would be in the black in 1995. In the future he also will have to combine Fokker and Dornier with Europe's regional aircraft manufacturers without sacrificing too many sites and jobs in his own firm. In this respect, the pragmatician readily alludes to "feasible visions."

In 1976, Bischoff came "to Daimler" as a lateral transfer and the welter of contradictory corporate goals are familiar to him even from his prior existence as an academician. He got his doctorate in 1973 (with top honors [summa cum laude] )in Heidelberg with a work on "Multivariable Systems of Goals in the Enterprise." It no longer upsets him that in it he did not arrive at a mathematically precise formula for the realization of a long-term optimum. Anyway, he now banks more on "soft" factors: dialogue, persuasion and an understandable explanation of corporate goals in which it is possible to approximate the optimum in any event. He is credited with having an "efficient management style."

Bischoff's long-established relationship with Schrempp will guarantee DASA an important position in the Daimler alliance. The new chief financial officer he is getting is Wolfgang Piller, 48, seconded since 1990 to Messerschmitt-Boelkow-Blohm GmbH [MBB] and DASA and since 1933 as president of BDLI [Federal Association of German Aerospace and Defense Industries] branch association.

### More Joint Ventures in Future

*95WS0057B Duesseldorf HANDELSBLATT in German 1 Nov 94 p 15*

[Article by Wieland Schmitz: "DASA Director Designate, Manfred Bischoff, Eager to Join in Fashioning Mergers and Joint Ventures in View of High Corporate Losses Resulting from Restructuring"; Subheadline: "His Estimate of the Prospects: 'Better Than Those of Someone Arriving Too Late'"]

[FBIS Translated Text] Munich, 31 October 1994—Deutsche Aerospace AG [DASA], emerging five years ago from the aviation, space and armaments firms of Dornier and MBB [Messerschmitt-Boelkow-Blohm] plus the electronics segment of General Power Company [AEG] Telecommunications Systems Technology and the drive-train and engine manufacturer Motor and Turbine Union, Inc. [MTU], booked a loss of 700 million German marks [DM] (turnover of DM18.6 billion, 86,000 employees), but depending on the exchange rate for the dollar, Bischoff anticipates a "substantial improvement" for 1994 on a turnover slightly below last year's high.

Cumulative losses for the two years therefore are likely to exceed DM1 billion attributable, in large part, to the sizable structural outlay, that is, financing the build-down of personnel and capacity.

An additional cost factor is aircraft manufacturer **Fokker N.V.** that was acquired last year for a half billion DM (51 percent). In 1993 Fokker registered a lost of almost 0.5 billion guilders and during the current year it had to be financially salvaged with a financial package of one billion guilders from DASA and the Netherlands government.

Still, Bischoff would "buy" Fokker "again today," albeit on different terms. "The long-term strategic goal that we have set for ourselves with Fokker, that is, realizing a leading position in the market for regional jets sized between 70 and 130 seats, is absolutely correct."

What could not be foreseen was the negative market growth—we were caught off guard by it. "Had we already been aware of all that, it would surely have surfaced somewhere." The finance officer, who had figured decisively in the acquisition negotiations, assigns no validity to the argument that they simply should have waited to acquire Fokker at a lower price: "No windows are open constantly welcoming entry—by waiting too long there is a risk of losing an appropriate opportunity."

Bischoff will assume his new position in May 1995 once Schrempp transfers to Stuttgart and will take over leadership of the world's third largest aerospace firm at a point in time when internal restructuring has been mostly concluded. What still remains on the agenda, however, is the highly political and no less equally difficult theme of European restructuring. Because of high research and development costs and the comparatively limited number of pieces at all aircraft, space and armaments equipment firms, it is the opinion of the entire branch that Europeans can no longer afford so many ongoing national parallel activities, especially considering the chief rivals in the U.S. who are considerably less fragmented that the Europeans.

In Bischoff's view, in upcoming years there will be many new joint ventures, especially in defense technology and in aerospace, where hitherto there have been only a few European joint ventures. In this connection, DASA's most significant partner will be France's Aerospatiale with which there are already some ongoing joint ventures. In the long term, Bischoff can also envision the formation in Europe of regional foci for different sectors of defense technology such as aircraft, guided weapons, electronics, et cetera.

Such an inherently worthwhile concentration, however, would require the existence of a uniform European-wide defense procurement. In Bischoff's words: "It will not work as long as we have national procurement centers in Europe. We are not permitted to stray too far from political considerations, or else we will lose the market."

**Managerial Requirement Vis-a-Vis BAe**

DASA's initial task is to concentrate Europe's loss-riddled activities in regional aircraft construction. Fokker is the world leader for regional jets with the Fokker 100 and the Fokker 70. British Aerospace (BAe) is the most significant rival with the Avro models. DASA's management, which claims the leadership role in any cooperative activity, is negotiating with the British and with Aerospatiale on cooperation, although it is proving to be tough, since the competing products on either side are blocking the way.

DASA's subsidiary, Dornier, continues to operate in the red with its 30-seat turboprop craft, the Do 328, that gets high technical praise. In any European joint venture it will likely be allied with Aerospatiale and Italy's **Alenia** (that will operate the ATR consortium). In this case too, however, there are rival aircraft and so far ATR has not indicated any interest in Dornier. Hence, Bischoff cautions: "We should not expect any snap solutions here. The only thing we all realize is that we have to merge—for rivals, however, that means who gives up what, who contributes what." The Fokker 50 propeller craft that competes with ATR's aircraft is holding up well on the market and is being produced as long as the market allows. In any international turboprop joint venture, DASA would not levy any managerial stipulation.

According to Bischoff, the best chances for embarking on joint ventures are new projects. Even there, however, tough talks on shares and job packages are to be expected. Despite all the problems, Bischoff is determined to push ahead with European-wide structuring. "It is best for us to get in at the outset and endeavor to influence this process in a decisive manner—we then have an opportunity to fare better than someone arriving belatedly."

## Germany: DASA to Change Name to Daimler-Benz Aerospace AG

*95WS0055B Stuttgart FLUG REVUE in German Nov 94 p 9*

[Article: "New Company Name for DASA"]

[FBIS Translated Text] Deutsche Aerospace AG [DASA] will be getting a new name at the beginning of next year: it is to be rechristened "Daimler-Benz Aerospace AG," as the company magazine "DASA aktuell" reports. The reason given for the name change, which occurs only five years after creation of Deutsche Aerospace AG, is that this [original] title of "Deutsche" Aerospace is less and less applicable as broader alliances and partnerships have been entered into, in particular since the takeover of the Fokker majority through DASA. Furthermore, the "Daimler-Benz" part of the name is by reason of its worldwide recognition of inestimable value which will make a clear-cut positioning easier. The excellent reputation and financial soundness should give it an additional push at the international level. The works councils have already agreed to the name change.

## Italy: Olivetti's Enhanced Services Strategy Proves Profitable

*95WS0034A Paris LE MONDE INFORMATIQUE in French 14 Oct 94 p 10*

[Article by M.G.: "Olivetti Makes a Name for Itself in Services"]

[FBIS Translated Text] Olivetti entered the microcomputer services market at the right time. According to Dataquest, it is well ahead in the European desktop services sector, a segment defined by the research firm itself and one that now includes hardware maintenance, integration, software and network support, user training, and configuration management. Hewlett-Packard is in second place, followed by ATT-GIS, Bull, Computervision, and the ICG.

Activities by the Olivetti Services Department on the Old Continent generated revenues of $810 million in 1993 (out of total worldwide revenues of $5.5 billion, 20 percent of which was earned from services), compared to the $498 million earned by its closest rival, Hewlett-Packard. In France, Olivetti Services has 535 employees and a turnover of 500 million francs (about 30 percent of its total turnover). Olivetti intends to expand that performance by offering equipment management services extending to cost optimization (using benchmarking methods).

To strengthen its position in that sector, Olivetti will invest $120 million over three years and will probably experience a phase of external growth in order to gain new capabilities. Its efforts will be centered on the opening of remote network supervising centers for installations with at least 400 workstations. Three such centers are already in operation (in Great Britain, Italy, and South Africa). France will have one early in 1995.

As regards software support, Olivetti has also just strengthened its ties with Microsoft. The manufacturer, which was already included among the software maker's approved support centers, will now cover all of Europe with its maintenance services alongside the ICL, Digital, ATT-GIS, and Hewlett-Packard. For the past few months, Microsoft has been entrusting its first-level maintenance (with on-site maintenance) to "certified" partners. There are 15 of them in France.

**Joint French, German, Russian Helicopter Development**

*BR1811125594 Paris AFP SCIENCES in French 6 Oct 94 p 12*

[Unattributed report: "Franco-German Cooperation To Develop a Medium-Tonnage Helicopter in Russia"]

[FBIS Translated Text] One Franco-German and three Russian companies signed an agreement in Moscow on the creation of a Russian mixed-law company [societe de droit mixte] EUROMIL to develop, produce and market a 14-tonne helicopter capable of transporting up to 30 passengers, the Eurocopter company announced on 29 September. Eurocopter (70 percent owned by Aerospatiale and 30 percent by Deutsche Aerospace) will develop the cockpit, avionics and cabin arrangement for the Mi38 twin-turbo helicopter.

The Moscow-based Mil company will be responsible for the development of the aircraft which will be produced by the Kazan Helicopter Construction plant. This company will also be responsible for marketing to the Russian market. The Kilmov company will concentrate on the development, industrialization and production of the engine.

**France: Framework for S&T Cooperation with Japan, Taiwan Reported**

*95WS0036A Paris AFP SCIENCES in French 20 Oct 94 pp 1-3*

[Article: "Mr. Fillon to Japan and Taiwan"]

[FBIS Translated Text] Tokyo/Taipei—Mr. Francois Fillon, minister for higher education and research, said repeatedly during his 12-14 October trip to Japan that cooperation with the Japanese "is one of the top priorities in the reorientation of French science and technology policy." He also announced the creation of a permanent center where all French research organisms would be represented.

The minister told Mrs. Makiko Tanaka, minister of science and technology, and Mr. Kaoru Yosano, her counterpart in the Ministry of Education, Science, and Culture, that France next year would double the number of scholarships for young people going to Japan to study, and create an association of Japanese researchers who have come to France. "They constitute an access network to Japanese research," Mr. Fillon said.

The association, called "Tempyo," will also facilitate dissemination of information about the activities of CNRS [National Scientific Research Center] and other French research organisms in Japan. In all, about a hundred doctoral candidates will be "exchanged" each year for 12-month tours. This mechanism should respond to the desire on both sides to broaden access to laboratories specializing in basic research.

"It is not a healthy situation for there to be six times as many Japanese researchers in our laboratories as there are French researchers in Japan," said Mr. Fillon. "In terms of research, Japan today is on equal footing with the United States and all the great countries of Europe. It is time we work more closely with it."

The French Scientific and Technical Center soon to open its doors will be organized around the CNRS institutions represented in Tokyo, beginning with the National Institute of Agronomic Research (INRA), the French Research Institute for Exploitation of the Sea (IFREMER), and the National Institute for Research on Data Processing and Automation (INRIA), to be followed by the National Institute for Health and Medical Research (INSERM). This new French center would be second in size only to the one located in Washington.

The focal points of strengthened cooperation will be physics, medicine—including studies on the aging process—materials, oceanology, and space science. In the latter domain, Mr. Fillon announced that in January he would submit a report to the prime minister discussing a number of scientific objectives as well as manned space flights.

Mr. Fillon repeatedly said he is convinced the funding crisis over the Large Hadron Collider (LHC) at CERN [European Particle Physics Laboratory] would eventually be resolved. According to him, negotiations now under way with Bonn are expected to conclude once Germany's elections are over. "A decision will be announced in November," the minister added.

This will pave the way for scheduled talks with the Japanese and Americans, all of whom want to participate in experiments using the LHC. Japan, which had been invited to become a $2-billion stakeholder in the now-abandoned Superconducting Supercollider (SSC), might contribute half that amount to the LHC.

Another subject discussed was young people and science. Contacts have already been initiated between Science and Industry City of La Villette, in Paris, and the city of Osaka. Mr. Pierre David, president of the board of directors of the City, was part of the French delegation.

During his trip the minister also visited the Institute of Physical and Chemical Research (RIKEN), which falls under the Agency for Sciences and Technologies headed by Mr. Akiko Arima. RIKEN, with a budget of close to 23,728 billion yen (1.1 billion French francs [Fr]), 90 percent of it from government funds, and some 50 different laboratories, focuses on physics and chemistry, life sciences, and engineering sciences.

The institute boasts 620 researchers, including 270 with doctoral degrees, and 200 foreigners. But only three are Frenchmen, though there is cooperation with the Pasteur Institute and the National Institute for Nuclear and Particle Physics (IN2P3), and the Japanese institute sends many scientists to Caen's GANIL [Large National Heavy-Ion Accelerator].

RIKEN, which pursues research in the most diverse domains (plant biology, materials, neurology, etc.), participates actively in defining and building the costly scientific instruments used in physics research. It is currently building the Spring-8 synchrotron. Mr. Nagara, vice president of the institute, has proposed that a Frenchman participate in the work of the council defining the themes of RIKEN's "Frontier" projects.

Located on the grounds of Tsukuba's Science City, the KEK (National Laboratory for High-Energy Physics) is one of the largest of the 15 Japanese inter-university research institutes under the Ministry of Education, Science, and Culture. With an annual budget of 30 billion yen (Fr1.7 billion, including Fr1.4 billion for operations), KEK has 650 people on its staff and first-rate equipment: a 12-GeV [billion electron volt] proton synchrotron, operational since 1976, a 2.5-GeV linear electron accelerator (second largest in the world in capacity), and, since 1986, a 30-GeV electron and positron collider ("Tristan") as advanced as American and European installations.

KEK is currently building a new gamma radiation measuring apparatus. Russians and Chinese are furnishing the special crystals needed for the device. KEK has ties with the Serpukhov and Novossibirsk institutes in

Russia, hosting researchers from those institutes and ordering equipment from them. The director general of KEK, Mr. Hirotaka Sugawara, emphasized the need for an early decision on LHC: "We will decide in December how much to budget for participation in LHC. If Europe does not come to a decision on financing it in time, that will create problems for us."

The last research institution visited by Mr. Fillon was the University of Tsukuba, which has 35,500 students and accommodates more than 200 industrial research centers employing a total of 12,000 researchers. According to its president, Mr. Leo Esaki, winner of the 1973 Nobel Prize in Physics, the university plays host to many foreigners: 329 professors, 972 researchers, and 839 students—750 from Asian countries, notably China (296), Korea (230), and Taiwan (82), and smaller numbers from South America (37, of whom 20 are Brazilians), Europe (5 Frenchmen and 4 Germans), and the United States (10). Linked by accords with 14 countries and 24 universities, the University of Tsukuba supports exchange activities with Grenoble-1, Paris-Sud, and Paris-VI.

Problems encountered by French researchers in Japan were discussed in the CNRS office in Tokyo, in the presence of the new scientific counselor to the French Embassy, Mr. Francois Stuyck-Taillandier, and Mr. Daniel Pardo, CNRS's director of international relations. The new center which the ministry wants to establish in Japan will be organized around CNRS and serve as a showcase for French research organisms and a center for meetings and information exchange.

Currently 17 CNRS trainees are in Japan on more or less extended stints. Created this summer, the first joint Franco-Japanese laboratory, LIMMS (Laboratory for Integrated Micro Mechatronics), which specializes in design and production of micromachinery, will serve as magnet and test case. Its success would pave the way for launching new experimental facilities with other French research organisms.

In the eyes of researchers, the real problem with exploiting Japanese scientific information in France is the average 2-year lag-time for translations. It would also be useful, they believe, to organize joint work groups after their return to France.

**Fillon in Taiwan**

After his trip to Japan, Mr. Fillon made a 48-hour "private" visit to Taipei, where he repeatedly expressed "France's concern to restore balance in its policy vis-a-vis Taiwan."

Speaking in the presence of president Lee Teng-Hui and prime minister Lien Chan, Mr. Fillon—the first member of the French Government to visit Taipei—said: "The amity that exists between our two countries should lead us to build not only commercial relations but also relations in other more durable domains, such as science and technology. Our ties in these two domains need to be strengthened." The minister took the opportunity to announce that France plans next year to organize a "Forum" in Taiwan bringing together major research establishments and academic institutions so the two sides "can explore all possible paths of cooperation."

Mr. Fillon's trip should give fresh impetus to projects such as construction of the Taipei metro—including putting into service Matra's [Mechanics, Aviation, and Traction Company] "VAL" [driverless subway system], which has suffered endless delays for technical reasons—and to support the French response to the Taipei Power Company (TPC) call for bids on construction of a fourth nuclear power station.

Three competitors are in the race: Westinghouse (United States), ABB (Asean Brown Boveri, Sweden), and Framatome (France). Framatome is proposing two 1,300-megawatt reactors of the same kind as those operating in France. Paris, playing up the safety record of French reactors, is proposing, as an example of consolidated management of a nuclear power complex, the French model that covers all phases of the fuel cycle from uranium enrichment to storage of [radioactive] wastes and features a strict monitoring system.

TPC's generating stations are barely able to keep up with the yearly augmentation—close to 6 percent—of electric power consumption. The stations at Chinshan and Kuosheng have General Electric 600 and 900-megawatt boiling-water reactors, while the Manshan station uses two Westinghouse 900-megawatt pressurized-water reactors. Evaluation of the technical proposals is in the final stage. All three competitors are vying energetically for the TPC contract and the chance to put their technical teams to work on new plants.

## France: NEC to Participate in Bull's Privatization

*95WS0043D Paris LE MONDE in French 9 Nov 94 p 24*

[Article by Tokyo correspondent Ph. P.: "Already a Partner of the French Computer-Manufacturing Group, NEC Is Said to Have Decided to Participate in Bull's Privatization"—first paragraph is LE MONDE introduction]

[FBIS Translated Text] According to the economic daily NIHON KEIZAI, Nippon Electric (NEC) has decided to increase its stake in Bull when that company is partially privatized. The business daily wrote on 8 November that NEC was contemplating devoting some 10 billion yen (540 million francs) to this operation, so as to raise its stake in Bull from 4.4 percent to about 10 percent. NEC headquarters confirmed that the leading Japanese microcomputer manufacturer does intend to increase its stake in Bull, but they refused to quote a figure.

A few months ago, NEC did not conceal its puzzled irritation when the Bull management was looking for other possible partners in Japan (LE MONDE, 6 April). At the time, NEC seemed inclined to increase its stake only if the global partnership entered into by the two

companies early in 1994 was bearing fruit. According to NIHON KEIZAI, NEC decided to give a positive answer to the French request for marketing-strategy considerations, because of Bull's position on the French and European market. NEC is said to be especially interested in Bull's East European marketing network.

### France: NEC's Intentions in Bull's Privatization Questioned

*95P60023A Paris LE MONDE in French 10 Nov 94 p 24*

[Article by C.M.: "NEC's Possibly Increased Weight in Bull's Capital Is Worrisome for Telecommunications Industry"]

[FBIS Translated Text] NEC's forceful inroad into Bull's capital in favor of the latter's privatization is doubtless good news for both the government and the computer group's management, but, by the same token, is worrisome for the telecommunications industry. On Tuesday, 8 November, partially confirming Japanese press reports, the Japanese group made it clear that it intends to increase its participation in Bull from 4.4 to 10 percent (LE MONDE 9 November). NEC would be ready to put 530 million francs into Bull (10 billion yen).

According to some analysts, NEC would not seek to use Bull as a springboard for developing its own computer technology in Europe. "NEC has few such ambitions in the Old World and appears very Japan-centered," industry sources say. But, the Japanese group would be more interested in expanding its telecommunications activities. In fact, NEC is an important producer of telecommunications equipment. "Who knows if, in concert with NEC's gesture towards Bull, the Japanese group will not seek to obtain increased consideration of its offers, particularly for public phone systems?" To sum up, NEC would enter Bull in order to become a supplier of France Telecom! The assumption seems somewhat farfetched. Nevertheless, it is incumbent on the government to dispel these conerns as soon as it releases the request for offers, sometime in mid-November.

### Germany: NEC Establishes Research Lab at GMD Science Park

*MI2211130994 Sankt Augustin GMD-SPIEGEL in German No 3/94 pp 6-7*

[FBIS Translated Text] The Japanese NEC group is setting up a European research laboratory for supercomputers and communications systems in Sankt Augustin, near Bonn, with premises in the new GMD [Society for Mathematics and Data Processing] Technopark.

With its 140,000 employees and 74 subsidiaries in 28 countries overseas, NEC is one of the world's largest electronics groups. Since it opened its first European sales center in 1974, NEC has been a successful supplier to the European computer and semiconductor market. It already has production facilities in Great Britain and Ireland. NEC's first laboratory in Europe follows five research labs in Japan and two in Princeton (New Jersey).

A 64-processor configuration of the Cenju-3 system is being installed so that joint research projects can be carried out with the GMD. Work will focus primarily on numerical algorithms and their applications in parallel processing and on standardization tasks on parallel computers and multimedia communications systems, tools included. The Cenju-3 is being incorporated into an unusually heterogeneous network of parallel computers supplied by various firms—Thinking Machines, Meiko, Alliant, and Intel—all of which are already on hand at the GMD and can be used by universities and research institutes in the European Union via the German Research Network.

The new GMD Technopark creates an ideal environment in which scientists, product developers, suppliers, and users can coordinate their work. This is expected to foster innovation, bring the joint results closer to the marketplace, and speed up the conversion of ideas into products so as to keep abreast of the rapidly growing world information technology market. The GMD Technopark is a boost to science and the economy in the Bonn and Cologne region.

### Germany: Siemens' Plans for Expansion in Southeast Asia, Pacific Area Noted

*95WS0044A Duesseldorf HANDELSBLATT in German 2 Nov 94 p 21*

[Article: "Electronics Firm Shows Colors in Asia"; Subheadlines: "Siemens AG: Markets in Far East to Constitute Third Pillar"; "Billions in Investments"; "Board Meets in Singapore"; "Munich's Industrial Firm Siemens Eager to Share in Strong Asian-Pacific Area Economic Growth, Steadily Expand Its Market Share in Same Region"]

[FBIS Translated Text] Singapore, 1 November 1994—**Siemens Incorporated [AG]** of Munich is betting on Asia: during the first meeting of the firm's board of directors in Singapore, board director Heinrich von Pierer promised, "By the year 2000 we will invest $3.5 billion in the region." It was the first time in the company's history that such a meeting was held outside of Germany. As von Pierer emphasized: "It symbolizes a new era."

Southeast Asia's lure is 12-percent annual growth rates, the Siemens director explained. East Asia is growing at an average of seven percent annually. As he explains: "We are going to position ourselves for this region."

Siemens is already well placed in the region: in fiscal year 1993/1994, ending on 31 September, the firm realized $58 billion in booked orders internationally. The Asia-Pacific area accounted for $7 billion of that, as reported in Singapore. Last fiscal year turnover in that part of the world climbed to $5 billion. Von Pierer gushed that that is equal to a growth of nearly 10 percent. He provided no

further information on the previous fiscal year, since the board of directors will approve the annual closing of accounts only in the upcoming weeks.

In Singapore, von Pierer announced: "Over the next decade, Asia-Pacific will become a highly critical focus for us." Siemens AG's main business area continues to be Europe: Europe accounted for 65 percent of last year's order bookings, the U.S. for 20 percent. Still, 10 percent of the new orders did come from Asia, explained von Pierer. Five years earlier that share still totaled five percent. By the year 2000 the firm is eager to increase Asia's share of business volume to 20 percent.

**Doing Business in Asia for 120 Years**

Siemens' first involvement in the region goes back 120 years: in 1870 the group laid the ocean cable between Hong Kong and Shanghai. Today Siemens employs 26,000 individuals in Southeast Asia, East Asia and China. Von Pierer is skimpy on plans: in six years the number of employees in Asia is supposed to soar to 50,000. In the components segment alone 5,000 Malaysians and Singaporeans are working for Siemens. Currently, the Munich industrial firm has more than 80 subsidiaries and 20 manufacturing outfits in Asia. So far 40 joint ventures have been set up in the region.

For two days the board in Singapore discussed the firm's strategic thrust in the region together with Siemens representatives from Pakistan, India, Vietnam, Thailand, Malaysia, Singapore, Hong Kong, Australia, China and the Philippines, establishing five cornerstones:

- Siemens wants to expand the Asia-Pacific region as a third pillar in its worldwide business. By the year 2000, turnover is to increase to $15 billion.
- The presence in Asia is to be beefed up with personnel from Germany as well as from the region. Other joint ventures are planned.
- The sales systems and marketing are to be strengthened.
- At $1 billion, China is the investment focus. Nearly $500 million more of total investments of $3.5 billion are to be invested in India. Part of the investments are to be applied to on-site research and development.
- Siemens' primary business segments in Asia are telecommunications, transportation, medical technology and energy supply.

**Foci in China and India**

Annual demand for energy is growing by 10 percent a year just in Southeast Asian countries such as Thailand, Malaysia, Singapore, Brunei, Indonesia and the Philippines. In those countries, transmission loss is nearly 20-30 percent. Siemens' strategy for the energy sector in Southeast Asia is: closer cooperation with the universities, cooperation with the energy suppliers and training of Asians in Germany and Asia.

Von Pierer also promised the policymakers of the host country for the board meeting, Singapore's prime minister, Goh Chik Tong and senior minister, Lee Kuan Yew: "We have to be more than a simple trading partner." Siemens' director emphasized that more than mere exports are at issue. Direct investments are needed to increase the local share in production. There is a willingness for cooperation. And Siemens is ready to transfer technology.

## Italy: SGS-Thomson Starts Joint Venture in China

*MI1611153094 Milan IL SOLE-24 ORE in Italian 28 Oct 94 p 10*

[Article by Marco Moussamet: "Semiconductors, SGS-Thomson Starts a Joint Venture in China. It Is the First in the Group's History—120 Billion Lire Will Be Invested"]

[FBIS Translated Text] A joint venture in China for SGS-Thomson. It is the first time in the history of the group, that was set up seven years ago, and it demonstrates the Italian-French company's interest in this strongly developing market (and economic area).

The agreement that has been signed with the ShenKhen Seg high-tech industrial company (more simply SHC), that is in turn controlled by the ShenKhen electronics group [SEG], plans for a factory to be built in the free-trade area of Futian in southern China, to assemble and test SGS-Thomson semiconductors destined for customers all over the world. "The range of equipment," explained the managing director, Pasquale Pistorio, "will include products for the telecommunications and consumer electronics sectors that are also of particular interest to the Chinese market." SGS-Thomson will be the major shareholder (60 percent) of the newly formed company.

The plant will be constructed on a site covering 24 thousand square meters and it will call for an investment of $77 million (about 120 billion lire). It will employ 1,000 people. Construction work will start in the next few days and the first products should leave the factory at the beginning of 1996. The plans talk about producing a million pieces a day working at full capacity.

A design center (employing about 20 people) will also be set up to support the plant. It will have the job of "harmonizing the production with the requirements of the local market."

Pistorio explained yesterday in Paris that: "We decided to make this investment for two reasons. The first is that the Far East is certainly the area that is experiencing the highest growth rate in the world at present. China is in the absolute forefront of this extremely dynamic picture. Its position allows for the prediction that in a few years time the Chinese market will be at least as important as the European one. We were already present with technical and commercial offices, but that presence was largely insufficient."

"The second reason—added Pistorio—is that our present productive structures are no longer adequate to

meet the rhythms of the growth of the demand. Therefore, as we had to expand, we thought of China. At ShenZhen we not only found the ideal partner, but also an area that is being transformed into an important production center in the electronics field, and that offers excellent training for personnel, and infrastructures that are in advanced stages of realization."

The ShenZhen group is a company that comes under Chinese law and that operates under the control of the local municipality. It boasts of diversified interests, but works mainly in the electronics sector, and has a marked inclination to export.

SGS-Thomson, that the 1993 turnover has pushed into second place in the European classification of semiconductor producers, and 13th in the world classification, has been present for some time in the Pacific area (that accounts for 23 percent of its own turnover), with its Singapore branch (Microelectronics Asia-Pacific private Ltd., that has physically signed the agreement) and 14 offices, three of which are in China.

### Italy: High Tech Companies Cooperate with China

*MI1611154894 Milan IL SOLE-24 ORE in Italian 6 Nov 94 p 5*

[Article by Michele Calcaterra: "A Wave of Contracts and Collaboration Agreements in Peking for Italian Companies Seeking New Commercial Outlets—Alenia Radar for the Chinese Sky—A Finmeccanica Company To Supply Plant for 100 Billion Lire—Agreements for Snamprogetti and STET, Too"]

[FBIS Translated Text] "It is necessary to think of a relationship with China that is not only commercial, but also industrial." Fabiano Fabiani, managing director of Finmeccanica, is convinced that Italy needs to change its role and its mentality, if it is to remain and to expand in the country. It should not only be concerned with the pure and simple export of goods, but also with investments in production, technical assistance, and training. Unless this happens Italian companies are destined to succumb in the face of the aggressive international competition. In view of this, it is important that the financial instrument plays a primary role, and therefore that our structures quickly adapt to the new requirements of China.

Important goals. Yesterday, however, Italian industry attained three important goals with Alenia, Snamprogetti, and STET [Turin Telephone Finance Company]. This is a sign that our technology is a winner in many cases.

Alenia has won a contract worth $65 million (over 100 billion lire, with access to Japanese funding), for the supply of 15 radar systems for air traffic control, to be installed in various airports in the People's Republic. The supply refers to the second part of the Marco Polo project, that started in 1989 with a first contract for 18 billion lire. When the project ends, that is, in four years' time, eastern China will have a complete radar coverage that will solve the problems of air coordination with some of the bordering countries such as Taiwan, Korea, Japan, and Vietnam. A cascade of specific agreements will follow. These will concern the construction of certain parts on site, assistance, and the maintenance of the network. Then, later on, they will take part in the bidding for the contract to develop the western part of the country.

Finmeccanica is present in China in the automation (with Elsag), energy, and transport (Ansaldo) sectors. This latter is in the pole position in the bidding to supply trains for the Peking subway (a head-on contest with the Japanese Mitsubishi). In the meantime, in the energy sector (the group controls 3 percent of the Chinese market), a preliminary agreement has just been sealed for the construction of a 60-megawatt power plant in Mongolia.

Still concerning the IRI [Institute for the Reconstruction of Industry] group, STET has sealed a collaboration agreement for telecommunications with the Liantong company. It particularly concerns the design, installation, and maintenance of telecommunications networks, and the supply of transmission, switching, and integrated management support systems.

The project covers a wide area and opens up new prospects for the penetration of the STET group into the Chinese market. It is enough to consider that the Chinese have 48 million telephone lines today, and that, with a total investment of $100 billion, this should increase to $140 million by the end of the century. Furthermore, the fact that STET has sealed the letter of intent with Liantong, a company that was formed this summer, and that is the second administrator in the country, appears interesting. This administration comes under the Industry and Electricity, Railway, and Energy Ministries, and is in direct competition with the historic Ministry of Posts and Telecommunications.

The prospects are therefore wide, and one of these concerns the entry into mobile telephones (networks are programmed for four cities: Peking, Shanghai, Canton and Tianjin).

Still concerning the public group, Italtel, that has now been in China for more than 10 years, appears to be very active in the sale and production of equipment, and in transmission. The company recently sealed a letter of intent with the Ministry of Electronics, to study a joint venture in the field of switching and of GSM [Global System for Mobile Communications]. Italtel employs about 40 people, both Italians and Chinese, in the republic, and has a turnover of more than 50 billion lire. Within the area, the group is also present in the Philippines and in Vietnam.

Finally, Snamprogetti signed a project for 80 billion lire yesterday, with China Textile Machinery and Technology Import and Export, for the construction of a plant for the production of 60 thousand tonnes of acrylic fibers a year using Montefibre technology. The plant, that will be completed in the coming 27 months, will be in Jilin. This is the 32nd contract for Snamprogetti, that has been present in China since 1963.

**What Italy Sells to China**

**Exports January-July 1994 divided to show the various sectors and their percentages of the total amount (2.2263 trillion lire) exported.**

| | |
|---|---|
| Machinery | 30.3 |
| Petroleum products | 2.4 |
| Metallurgy | 7.1 |
| Instrumentation | 39.2 |
| Textiles and clothing | 2.9 |
| Chemicals | 4.2 |
| Mechanics | 4.2 |
| Vehicles | 6 |
| Other sectors | 3.7 |

Foreign Broadcast Information Service (FBIS) and Joint Publications Research Service (JPRS) publications contain political, military, economic, environmental, and sociological news, commentary, and other information, as well as scientific and technical data and reports. All information has been obtained from foreign radio and television broadcasts, news agency transmissions, newspapers, books, and periodicals. Items generally are processed from the first or best available sources. It should not be inferred that they have been disseminated only in the medium, in the language, or to the area indicated. Items from foreign language sources are translated; those from English-language sources are transcribed. Except for excluding certain diacritics, FBIS renders personal names and place-names in accordance with the romanization systems approved for U.S. Government publications by the U.S. Board of Geographic Names.

Headlines, editorial reports, and material enclosed in brackets [ ] are supplied by FBIS/JPRS. Processing indicators such as [Text] or [Excerpts] in the first line of each item indicate how the information was processed from the original. Unfamiliar names rendered phonetically are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear from the original source but have been supplied as appropriate to the context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by the source. Passages in boldface or italics are as published.

## SUBSCRIPTION/PROCUREMENT INFORMATION

The FBIS DAILY REPORT contains current news and information and is published Monday through Friday in eight volumes: China, East Europe, Central Eurasia, East Asia, Near East & South Asia, Sub-Saharan Africa, Latin America, and West Europe. Supplements to the DAILY REPORTs may also be available periodically and will be distributed to regular DAILY REPORT subscribers. JPRS publications, which include approximately 50 regional, worldwide, and topical reports, generally contain less time-sensitive information and are published periodically.

Current DAILY REPORTs and JPRS publications are listed in *Government Reports Announcements* issued semimonthly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161 and the *Monthly Catalog of U.S. Government Publications* issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The public may subscribe to either hardcover or microfiche versions of the DAILY REPORTs and JPRS publications through NTIS at the above address or by calling (703) 487-4630. Subscription rates will be provided by NTIS upon request. Subscriptions are available outside the United States from NTIS or appointed foreign dealers. New subscribers should expect a 30-day delay in receipt of the first issue.

U.S. Government offices may obtain subscriptions to the DAILY REPORTs or JPRS publications (hardcover or microfiche) at no charge through their sponsoring organizations. For additional information or assistance, call FBIS, (202) 338-6735,or write to P.O. Box 2604, Washington, D.C. 20013. Department of Defense consumers are required to submit requests through appropriate command validation channels to DIA, RTS-2C, Washington, D.C. 20301. (Telephone: (202) 373-3771, Autovon: 243-3771.)

Back issues or single copies of the DAILY REPORTs and JPRS publications are not available. Both the DAILY REPORTs and the JPRS publications are on file for public reference at the Library of Congress and at many Federal Depository Libraries. Reference copies may also be seen at many public and university libraries throughout the United States.

# END OF FICHE DATE FILMED

12 Jan 95